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審査請求　未請求　請求項の数９　ＯＬ　（全 23 頁）

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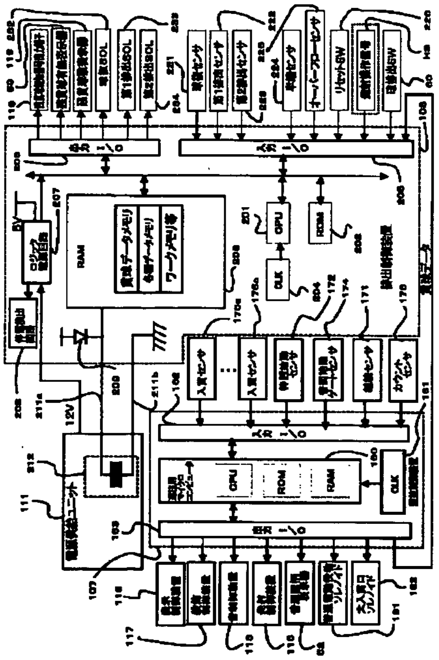
(54)【発明の名称】　遊技機

(57)【要約】　　（修正有）

【課題】　高速な賞球排出処理を実現しつつ、賞球数情報を保持でき、かつ停電復旧時等に、賞球の払い出しを速やかに行える遊技機を提供する。

【解決手段】　遊技制御装置１０７から送信される賞球数情報をＲＡＭ２０３の賞球数加算メモリに順次加算記憶し、ＲＡＭ２０３における賞球数情報の記憶内容が保持されるようにバックアップし、遊技機１の電源投入時（特に、停電復帰時）に、ＲＡＭ２０３の賞球数加算メモリに賞球数情報が保持されていた場合、保持されている賞球数情報全体を参照し、その参照結果から未払い賞球供給の優先順位を決定して賞球排出を行う。



【特許請求の範囲】

【請求項１】　遊技盤面における遊技の進行を制御するとともに、遊技において発生した遊技価値を遊技者に供給するための賞球数情報を送信する遊技制御装置と、
遊技制御装置から送信された賞球数情報に基づいて遊技者に遊技価値を供給する遊技価値供給処理手段を有する排出制御装置と、を備えた遊技機において、
前記排出制御装置は、
情報を記憶可能な記憶手段と、
前記遊技制御装置から送信された賞球数情報を前記記憶手段の所定の賞球数情報記憶領域に記憶させる情報記憶処理手段と、
前記記憶手段における前記賞球数情報の記憶内容が保持されるようにバックアップするバックアップ手段と、
遊技機の電源投入時に、前記記憶手段の所定の賞球数情報記憶領域に賞球数情報が保持されていた場合、保持されている賞球数情報全体を参照し、その参照結果から遊技価値供給の優先順位を決定する優先順位決定手段と、
を備え、
前記排出制御装置の遊技価値供給処理手段は、
前記優先順位決定手段によって決定された所定の優先順位で遊技価値の供給を行うことを特徴とする遊技機。

【請求項２】　遊技盤面における遊技の進行を制御するとともに、遊技において発生した遊技価値を遊技者に供給するための賞球数情報を送信する遊技制御装置と、
遊技制御装置から送信された賞球数情報に基づいて遊技者に遊技価値を供給する遊技価値供給処理手段を有する排出制御装置と、を備えた遊技機において、
前記排出制御装置は、
情報を記憶可能な記憶手段と、
前記遊技制御装置から送信された賞球数情報を前記記憶手段の所定の賞球数情報記憶領域に記憶させる情報記憶処理手段と、
前記記憶手段における前記賞球数情報の記憶内容が保持されるようにバックアップするバックアップ手段と、を備え、
前記排出制御装置の遊技価値供給処理手段は、
遊技機の電源投入時に、前記記憶手段の所定の賞球数情報記憶領域に賞球数情報が保持されていた場合、保持されている賞球数情報全体を合計し、合計した遊技価値を一括して供給することを特徴とする遊技機。

【請求項３】　前記遊技制御装置および排出制御装置は、これら装置内で使用するための電源を別途構成された電源装置から供給される構成とし、
前記バックアップ手段は、
前記記憶手段に対してバックアップ電源を供給可能なバックアップ電源手段で構成され、該バックアップ電源手段は前記排出制御装置の外部に設けられていることを特徴とする請求項１又は２記載の遊技機。

【請求項４】　前記遊技制御装置および排出制御装置は、これら装置内で使用するための電源を別途構成された電源装置から供給される構成とし、
前記電源装置は、
遊技機の外部から供給される電源を受けて、所要の電源を生成して前記排出制御装置に供給するものであり、
前記バックアップ手段は、
遊技機外部からの電源供給が断たれることにより電源装置から排出制御装置への電源供給が断たれた場合に、前記記憶手段の記憶内容が保持されるように記憶手段に対してバックアップ電源を供給する素子であり、
かつバックアップ手段は、前記電源装置に設けられていることを特徴とする請求項１又は２記載の遊技機。

【請求項５】　前記優先順位決定手段は、
前記記憶手段の所定の賞球数情報記憶領域に保持されている賞球数情報のうち、賞球数の大小により遊技価値供給の差をつけ、賞球数の大きい賞球数情報を優先した優先順位とすることを特徴とする請求項１、３あるいは４の何れかに記載の遊技機。

【請求項６】　前記優先順位決定手段は、
前記記憶手段の所定の賞球数情報記憶領域に保持されている賞球数情報のうち、各賞球数毎の入賞球数の大小により遊技価値供給の差をつけ、入賞球数の大きい賞球数情報を優先した優先順位とすることを特徴とする請求項１、３あるいは４の何れかに記載の遊技機。

【請求項７】　前記記憶手段の前記賞球数情報記憶領域には、遊技機で決められた最小賞球数情報から最大賞球数情報までの各賞球数情報に対応して賞球数情報データ記憶要素が形成され、
前記情報記憶処理手段は、送信された賞球数情報を当該賞球数情報に対応した前記賞球数情報データ記憶要素に加算記憶し、この加算記憶に基づいて前記遊技価値供給処理手段は遊技者に遊技価値を供給する構成であり、
前記バックアップ手段は、賞球数情報および該賞球数情報に対応した賞球数情報データ記憶要素が保持されるようにバックアップするものであることを特徴とする請求項１乃至６の何れかに記載の遊技機。

【請求項８】　遊技価値の供給条件の１つとして、遊技機裏面側の予備球流路の所定位置に予備球センサが配設されており、
前記排出制御装置の遊技価値供給処理手段は、
前記予備球センサによって保証されている遊技球数を、一括して供給する遊技価値の１回の供給量の最大とすることを特徴とする請求項２記載の遊技機。

【請求項９】　遊技機の電源投入時に、前記記憶手段の所定の賞球数情報記憶領域に賞球数情報が保持されていた場合、保持されている賞球数情報に基づく遊技価値の供給を行っていることを報知する報知手段を備えていることを特徴とする請求項１乃至８の何れかに記載の遊技機。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、遊技制御装置と排出制御装置とが別途構成され、遊技制御装置から送信された遊技価値情報としての賞球数情報に基づいて排出制御装置が遊技者に遊技価値を供給する遊技機（例えば、パチンコ遊技機）に関する。

【０００２】

【従来の技術】従来のパチンコ遊技機は、遊技盤面における遊技の進行を制御する遊技制御装置から送信された賞球数情報に基づいて、別途構成（基板が別に構成されているという意味）された排出制御装置が排出装置（例えば、排出ユニット）を駆動制御することで、遊技者に遊技価値（例えば、賞球排出としての遊技球）を供給していた。すなわち、遊技盤面に形成される遊技領域に遊技球を発射し、この発射球が遊技領域内に設けられた各種入賞口に入賞したことを条件として、遊技者に遊技価値の供給をすべく、排出制御装置に賞球数情報（例えば、７個賞球、１３個賞球というデータ）を送信して、排出制御装置により遊技者に遊技価値としての所定数の遊技球を供給している。

【０００３】詳しくは、遊技性を高めるために、遊技領域に設けられた入賞口によって賞球数を異ならせ（例えば、始動入賞口への入賞に対しては７個賞球、他の入賞口への入賞に対しては１３個賞球）、これら入賞口に入賞した入賞数を記憶する（例えば、賞球数が２種類の場合は、一方を記憶し、他方は記憶しないことによって、両者を区別する）。そして、入賞した遊技球（入賞球）は、この入賞球を１個宛検出するセーフユニットに集合させられ、セーフユニット内に設けられた停留機構により入賞球は一時的に停留されて、この状態における入賞球がセーフセンサによって１個宛検出される。

【０００４】そして、遊技制御装置ではセーフセンサからの入賞球信号に基づいて、入賞球記憶を確認し、入賞球記憶が有る場合は、対応する賞球数情報（例えば、７個）を排出制御装置に送信し、また、入賞記憶が無い場合は、設定された賞球数情報（例えば、１３個）を送信する。次いで、排出制御装置は、送信された賞球数情報に基づいて遊技球を遊技者に供給（例えば、排出ユニットを駆動することで供給）するとともに、セーフユニットの停留機構を駆動させて当該賞球排出に関わった入賞球は遊技機外に排出して、入賞球に基づく賞球排出処理が終了する。この際、遊技制御装置においては、排出制御装置に送信した入賞球記憶を減算するタイミングは、排出制御装置への送信が終了した時、賞球排出処理が開始された時、あるいは、賞球排出処理が終了した時となっている。上記は賞球数情報が２系統（例えば、７賞球および１３賞球）の例であるが、これ以外にも３系統（例えば、５個賞球、７賞球および１３賞球）のような複数の賞球が設定されている場合もある。何れにしろ遊技制御装置では、入賞口へ入賞した時点で、その入賞口に対応する賞球数を排出制御装置に対して送信しており、排出制御装置では、遊技制御装置から送信されてきた賞球数データの順に賞球の排出を行っている。

【０００５】また、賞球排出を高速にするために、上記したセーフユニットを設けることなく、すなわち、セーフユニットで１個宛検出したことに基づいて遊技制御装置から排出制御装置へ賞球数情報を送信する方法に代わって、例えば遊技盤面に設けられた各入賞口毎にセンサを設け、これらセンサに遊技球が入賞したことに基づいて、排出制御装置に順次賞球数情報を送信するとともに、入賞した遊技球を上記のごとく一時停留しておくことなく遊技機外に排出する制御を行い、一方、排出制御装置は送信された賞球数情報を順次記憶していき、この記憶していった賞球数情報に基づいて排出制御装置により排出ユニットを駆動して賞球を排出するパチンコ遊技機の提案がある。

【０００６】

【発明が解決しようとする課題】ところで、上記した従来のパチンコ遊技機にあっては、以下のような問題点があった。

（イ）しかしながら、上記したパチンコ遊技機は、遊技機に供給される電源（遊技機の外部（例えば、島設備）からＡＣ２４Ｖで供給される）が遮断（停電）した際には、遊技制御装置あるいは排出制御装置に記憶された賞球数情報（例えば、７個、１３個という賞球データ）が消去されてしまっていた。このとき、上記したセーフユニットが設けられたパチンコ遊技機の場合には、入賞した遊技球はセーフユニットの停留装置より上流に停留されているので、その遊技球（入賞球）に基づき賞球は行えるものの、賞球数記憶が消去された結果、停留されている入賞球は全て、特定の賞球数（例えば、全て１３個賞球になってしまう等）に代わってしまい、遊技者あるいは遊技店に損害を与えてしまうという問題点があった。全て１３個賞球になってしまった場合には、遊技店が損害を被る。

（ロ）一方、セーフユニットを設けないタイプの上記した提案されているパチンコ遊技機によれば、入賞口に入賞した入賞球は、一時停留されることなく遊技機外に排出されてしまうので、排出制御装置が順次記憶した賞球数情報が消去されてしまうと遊技者に損害を与えてしまい、遊技店との間でトラブルが発生してしまう。ところで、このようにセーフユニットを設けずに賞球排出を高速にするという要求は、近時望まれているところでもある。

【０００７】（ハ）このような問題を解決するために、例えば記憶された賞球数情報を保持する機能を設けることが考えられるが、単に記憶を保持する機能を設けただけの構成であると、特に停電等で遊技機が使用できなくなり、その後、停電から復旧した場合に、以下のような問題点がある。

①単に賞球数情報の記憶を保持する機能を設けただけだと、停電などの後の停電から復旧した場合の電源投入時に、遊技機に保持された賞球数情報が存在していて賞球の払い出しが行われる際に、賞球数の少ない遊技球の排出が連続したり、あるいは賞球数の少ない賞球排出の遊技球が先に排出されてしまって、上皿に球が溜まるのに時間がかかるという欠点がある。そのため、すぐに遊技を行わない遊技者が多いと、ただでさえ停電時などで売り上げが一時的に落ちてしまっているのに加えて、停電復旧後における遊技店での売り上げが向上しにくいという問題点がある。

②停電等で遊技機が使用不能になり、その後、停電から復旧した場合の電源投入時に、遊技機に保持された賞球数情報が存在していて賞球の払い出しが行われる際に、賞球の払い出しベースが遅い場合や、一定量の球がすぐに確保できない遊技機では、遊技者に不満感を与えかねない。また、賞球の払い出しが遅れると、遊技が中断されるという事態も生じる。

【０００８】③例えば、停電復旧後に、直ちに遊技を続行したい遊技者は球がすぐになくなってしまうので、遊技が断続的になってしまったりするため未払い出しの賞球の早期排出を望み、また、未払い出し賞球の状況を把握してから遊技を行いたい遊技者は、未払い出しの賞球が一定以上にならないと、遊技を始めたくないので、すぐに大量の賞球払い出しを望むことになる。特に、停電からの復旧時には、大勢の遊技者が上述したような要求を行うので、これを解決することが望まれる。

④停電復旧時に、全ての遊技機での遊技者の遊技再開が遅れると、遊技店としては、売り上げが極端に減少することが予想されるので、速やかな遊技再開が可能な遊技機が望まれる。上記例は、主に停電復旧時であるが、例えば開店中に点検、整備の必要があって、遊技機の電源を一時的にオフしてから復旧するような場合も同様の問題がある。

【０００９】そこで本発明は、上記問題点に鑑みなされたもので、高速な賞球排出処理を実現しつつ、賞球数情報を保持でき、かつ停電復旧時等に、賞球の払い出しを速やかに行える遊技機を提供することを目的としている。

【００１０】

【課題を解決するための手段】上記目的達成のため、請求項１記載の発明による遊技機は、遊技盤面における遊技の進行を制御するとともに、遊技において発生した遊技価値を遊技者に供給するための賞球数情報を送信する遊技制御装置と、遊技制御装置から送信された賞球数情報に基づいて遊技者に遊技価値を供給する遊技価値供給処理手段を有する排出制御装置と、を備えた遊技機において、前記排出制御装置は、情報を記憶可能な記憶手段と、前記遊技制御装置から送信された賞球数情報を前記記憶手段の所定の賞球数情報記憶領域に記憶させる情報記憶処理手段と、前記記憶手段における前記賞球数情報の記憶内容が保持されるようにバックアップするバックアップ手段と、遊技機の電源投入時に、前記記憶手段の所定の賞球数情報記憶領域に賞球数情報が保持されていた場合、保持されている賞球数情報全体を参照し、その参照結果から遊技価値供給の優先順位を決定する優先順位決定手段と、を備え、前記排出制御装置の遊技価値供給処理手段は、前記優先順位決定手段によって決定された所定の優先順位で遊技価値の供給を行うことを特徴とする。

【００１１】請求項２記載の発明による遊技機は、遊技盤面における遊技の進行を制御するとともに、遊技において発生した遊技価値を遊技者に供給するための賞球数情報を送信する遊技制御装置と、遊技制御装置から送信された賞球数情報に基づいて遊技者に遊技価値を供給する遊技価値供給処理手段を有する排出制御装置と、を備えた遊技機において、前記排出制御装置は、情報を記憶可能な記憶手段と、前記遊技制御装置から送信された賞球数情報を前記記憶手段の所定の賞球数情報記憶領域に記憶させる情報記憶処理手段と、前記記憶手段における前記賞球数情報の記憶内容が保持されるようにバックアップするバックアップ手段と、を備え、前記排出制御装置の遊技価値供給処理手段は、遊技機の電源投入時に、前記記憶手段の所定の賞球数情報記憶領域に賞球数情報が保持されていた場合、保持されている賞球数情報全体を合計し、合計した遊技価値を一括して供給することを特徴とする。

【００１２】請求項１又は２に従属する請求項３記載の発明は、前記遊技制御装置および排出制御装置は、これら装置内で使用するための電源を別途構成された電源装置から供給される構成とし、前記バックアップ手段は、前記記憶手段に対してバックアップ電源を供給可能なバックアップ電源手段で構成され、該バックアップ電源手段は前記排出制御装置の外部に設けられていることを特徴とする。

【００１３】請求項１又は２に従属する請求項４記載の発明は、前記遊技制御装置および排出制御装置は、これら装置内で使用するための電源を別途構成された電源装置から供給される構成とし、前記電源装置は、遊技機の外部から供給される電源を受けて、所要の電源を生成して前記排出制御装置に供給するものであり、前記バックアップ手段は、遊技機外部からの電源供給が断たれることにより電源装置から排出制御装置への電源供給が断たれた場合に、前記記憶手段の記憶内容が保持されるように記憶手段に対してバックアップ電源を供給する素子であり、かつバックアップ手段は、前記電源装置に設けられていることを特徴とする。

【００１４】請求項１、３あるいは４の何れかに従属する請求項５記載の発明は、前記優先順位決定手段は、前記記憶手段の所定の賞球数情報記憶領域に保持されてい

る賞球数情報のうち、賞球数の大小により遊技価値供給の差をつけ、賞球数の大きい賞球数情報を優先した優先順位とすることを特徴とする。

【００１５】請求項１、３あるいは４の何れかに従属する請求項６記載の発明は、前記優先順位決定手段は、前記記憶手段の所定の賞球数情報記憶領域に保持されている賞球数情報のうち、各賞球数毎の入賞球数の大小により遊技価値供給の差をつけ、入賞球数の大きい賞球数情報を優先した優先順位とすることを特徴とする。

【００１６】請求項１乃至６の何れかに従属する請求項７記載の発明は、前記記憶手段の前記賞球数情報記憶領域には、遊技機で決められた最小賞球数情報から最大賞球数情報までの各賞球数情報に対応して賞球数情報データ記憶要素が形成され、前記情報記憶処理手段は、送信された賞球数情報を当該賞球数情報に対応した前記賞球数情報データ記憶要素に加算記憶し、この加算記憶に基づいて前記遊技価値供給処理手段は遊技者に遊技価値を供給する構成であり、前記バックアップ手段は、賞球数情報および該賞球数情報に対応した賞球数情報データ記憶要素が保持されるようにバックアップするものであることを特徴とする。

【００１７】請求項２に従属する請求項８記載の発明は、遊技価値の供給条件の１つとして、遊技機裏面側の予備球流路の所定位置に予備球センサが配設されており、前記排出制御装置の遊技価値供給処理手段は、前記予備球センサによって保証されている遊技球数を、一括して供給する遊技価値の１回の供給量の最大とすることを特徴とする。

【００１８】請求項１乃至８の何れかに従属する請求項９記載の発明は、遊技機の電源投入時に、前記記憶手段の所定の賞球数情報記憶領域に賞球数情報が保持されていた場合、保持されている賞球数情報に基づく遊技価値の供給を行っていることを報知する報知手段を備えていることを特徴とする。

【００１９】

【発明の実施の形態】以下、本発明の実施の形態をパチンコ遊技機に適用した例として図面を参照して説明する。

Ａ．遊技機の正面構成

図１は遊技機の正面図である。図１において、１はいわゆるＣＲ機と称される遊技機であり、遊技機１にはカード式球貸機（以下、単に球貸機という）２が併設されている。球貸機２にはカードリーダーが内蔵され、球貸機２の前面パネル３にはプリペイドカードが挿入されるカード挿入口４が形成されているとともに、前面パネル３（開閉可能な構造）を施錠する鍵装置５が設けられている。

【００２０】遊技機１は額縁状前面枠１１と、ガラスを支持する樹脂製のガラス枠１２と、遊技領域の形成された遊技盤１３と、前面表示パネル１４と、前面表示パネル１４の下方の前面操作パネル１５とを有している。額縁状前面枠１１は木製の機枠１６（図２参照）に対して上部蝶番１７および下部蝶番１８によって開閉可能に支持され、ガラス枠１２は額縁状前面枠１１に開閉可能に支持されている。なお、ガラス枠１２は鍵装置１９によって開閉可能に施錠されている。

【００２１】前面表示パネル１４には賞球を受ける上皿２１が形成されるとともに、遊技球を購入するときに操作する球貸釦２２、プリペイドカードの残高を表示するカード度数表示器（カード残高表示器）２３、プリペイドカードを排出するときに操作するカード排出釦（返却釦）２４、および上皿２１の球を後述の下皿３２に移すために両者を接続する通路を開閉するための開閉レバー２５が設けられている。なお、上皿２１の内部には遊技音等を出力するスピーカが設けられているが、図示略している。前面操作パネル１５には、灰皿３１および下皿３２が形成されるとともに、下皿３２に貯留された球を外部下方に抜くための球抜きレバー３３が設けられている。また、前面操作パネル１５の右端部側には発射装置の発射操作ノブ３４が設けられている。

【００２２】上皿２１は上面が開放して遊技球を貯留可能な球貯留部が形成されるとともに、前面表示パネル１４の前面側から前方に突出し、かつ上皿２１の下側部分が前面表示パネル１４の下端近傍まで延在する膨出形状に形成されている。また、下皿３２は上面が開放して遊技球を貯留可能な球貯留部が形成されるとともに、上皿２１と比較的接近した位置において遊技機１の前面側から前方に突出した膨出形状に形成されるとともに、下皿３２の両側に側壁部材３５ａ、３５ｂが配置されている。そして、膨出形状に形成した上皿２１の下側部分において前面表示パネル１４の当接する当該上皿２１の当接箇所の近傍から上皿２１の前端部にかけて上皿２１の中央底部を左右対象に削り取るように斜昇する斜昇壁面３６が形成され、この斜昇壁面を形成することにより、下皿３２の上方空間を大きく確保して、遊技者が遊技盤１３に目を向けたままで下皿３２の遊技球を掻き出すことが容易で、かつ遊技機１後部の見学者に対して下皿３２に貯留された出球をアピールすることが可能になっている。

【００２３】次に、遊技盤１３における遊技領域はパチンコ球を用いて遊技を行うものであれば、例えばいわゆる「第１種」に属するものあるいは図柄表示装置を備えた「第３種」に属するもの、あるいは他の機種等であっても、任意の構成をとり得るが、一例として本実施の形態では「第１種」に属するタイプのものを用いている。遊技盤１３にはアウト球流入口４１、レール４２、特別図柄表示装置４３、普通電動役物タイプの始動入賞口４４、変動入賞装置４５（大入賞口）、普図始動ゲート４６、４７、複数の一般入賞口４８～５０、特図始動記憶表示器５１、普通図柄表示装置５２、普図始動記憶表示

器５３、サイドランプ５４、５５、風車と呼ばれる打球方向変換部材（図示略）、多数の障害釘（図示略）が設けられている。

【００２４】ここで、遊技盤１３に設けられた複数の全ての入賞口、すなわち始動入賞口４４（内部に特図始動センサ１７２が配置）、変動入賞装置４５（大入賞口：内部に後述のカウントセンサ１７３が配置）および一般入賞口４８～５０（内部後述の入賞センサ１７５ａ～１７５ｂが配置）については、各入賞口毎に入賞センサ（例えば、近接センサ：ただし図１では略）が配置されており、これらの入賞口に入賞すると、賞球数情報が遊技制御装置１０７（後述の図２参照）から排出制御装置１０６（後述の図２参照）に送信されるようになっている。一方、遊技機１の額縁状前面枠１１の上部には大当り時に点灯（点滅状態も含む）する大当り表示器５６が設けられているとともに、大当り表示器５６の側方には島設備から球を補給したときに点灯するとともにエラー発生の場合に点滅する補給ランプ５７、賞球排出時および球貸し時に点灯する賞球ランプ５８が設けられている。また、遊技機１の額縁状前面枠１１の図中左側下部には残賞球有無表示器５９および球排出スイッチ（ＳＷ）６０が設けられている。残賞球有無表示器５９は、例えばＬＥＤから構成され、停電復旧時等に未払い出しの賞球（以下、適宜、残賞球という）があるか否かを表示して遊技者あるいは遊技店の係員に報知するもので、残賞球がある場合は点灯し（なければ消灯のまま）、残賞球の払い出しが行われているときは点滅する。球排出スイッチ（ＳＷ）６０は鍵式のもので、遊技店員が所定の鍵を挿入して一定方向に回転させてひねることによりオンとなり、停電復旧時等に未払い出しの賞球がある場合に、強制的に賞球排出を行わせるものである。

【００２５】Ｂ．遊技機の裏機構
次に、図２は遊技機１の裏機構を示す図である。図２において、遊技機１における裏機構の主要な部品としては、貯留タンク（上タンク）１０１、誘導路１０２、ターミナル基盤（外部端子基盤）１０３、接続ユニット１０４、半端センサ２２４（後述の図４参照）、排出ユニット１０５、排出制御装置１０６、遊技制御装置１０７、役物中継基盤１０８、発射ユニット１０９、カードユニット接続基板１１０、電源供給ユニット１１１、裏機構盤の基枠体１１２（裏メカベース）、音制御装置１１３、発射制御装置１１５、表示制御装置１１６、装飾制御装置１１７、残賞球数表示器１１８および残賞球報知信号出力端子１１９がある。

【００２６】ここで、本実施の形態では前述したように遊技盤１３に配置された複数の全ての入賞口、すなわち、始動入賞口４４、変動入賞装置４５（大入賞口）、一般入賞口４８～５０に入賞センサ１７２、１７３、１７５ａ～１７５ｃ（図４参照）が設けられており、これらの入賞センサ１７２、１７３、１７５ａ～１７５ｃにより検出された球は従来のような停留機構（いわゆるセーフユニット）により賞球排出のために一時停留されることなく、遊技機外へ排出される。なお、全入賞口に入賞センサを設ける場合に限らず、例えば同一賞球数の入賞口より入賞した球は樋により集合させ、その樋にてまとめて入賞センサで検出するようにしてもよい。遊技制御装置１０７、役物中継基盤１０８、および音制御装置１１３は、この場合遊技盤１３の裏側に取り付けられており、また表示制御装置１１６は、センター役物（特別図柄表示装置４３）の後部に配設されている。各制御ユニットの取り付け位置は、図２の態様に当然限られず、例えば遊技制御装置１０７が基枠体１１２に取り付けられる場合も有り得る。

【００２７】基枠体１１２は、合成樹脂製の一体成型品から形成され、遊技機１の前面枠１１の裏側に固定された金属フレーム１２１に取り付けられている。そして、この基枠体１１２の上に各種の部品、例えば貯留タンク１０１、誘導路１０２、ターミナル基盤１０３、接続ユニット１０４、排出ユニット１０５、排出制御装置１０６、発射ユニット１０９、カードユニット接続基板１１０、電源供給ユニット１１１、発射制御装置１１５、装飾制御装置１１７などが取り付けられており（例えば、ワンタッチの保持部材によって固定される）、これらの各種部品と基枠体１１２とを総称する概念として裏機構盤１１４と称している。

【００２８】金属フレーム１２１は矩形状をなし、遊技盤１３を着脱可能に収納固定する遊技盤収納部１２２が形成されている。遊技盤収納部１２２には図示略している複数の遊技盤固定器具が配置され、それらの複数の遊技盤固定器具によって遊技盤１３を固定するようになっている。貯留タンク１０１は排出される前の球を予め貯留しておくもので、この貯留タンク１０１の球数の不足は補給センサ（図示略）によって検出され、不足のときは島設備から球が補給される。貯留タンク１０１内の球は誘導路１０２により誘導され、排出ユニット１０５によって排出される。

【００２９】排出ユニット１０５は所定の球排出指令信号（排出制御装置１０６からの信号）に基づいて貯留タンク１０１より案内される遊技球を遊技者側へ所要数排出（ここでの排出には、賞球排出および球貸し排出が含まれる）する機能を有し、球排出機構を備えた排出装置を構成する。なお、排出ユニット１０５は２条の球排出通路（図示略）を有しており、一方の球排出通路が賞球用の排出を行い、他方の球排出通路が球貸し用の排出を行うようになっている。すなわち、２条の球排出通路を用途によって使い分ける構成になっている。賞球用の排出は、遊技において発生した遊技価値を遊技者に供給することに相当する。

【００３０】誘導路１０２に賞球排出および球貸し排出のための球が有るかどうかは、半端センサ２２４（予備

球センサ）によってそれぞれ検出される。半端センサ２２４は、２条の各通路（すなわち、賞球排出通路（予備球流路）および球貸し排出通路（予備球流路））に一対で設けられている。半端センサ２２４は遊技価値（遊技球）の供給条件の１つとして遊技機１裏面側の予備球流路の所定位置であって、例えば１００個程度の遊技球を排出できる位置に設けられている。したがって、排出ユニット１０５から半端センサ２２４までの予備球流路を埋めている遊技球は、予備球センサによって保証されている遊技球数に相当する。ターミナル基盤１０３はＡＣ電源の入力や遊技店のホールコンピュータ（管理装置：図示略）との間における信号の授受などについての中継を行うもので、リレー部およびコネクタ部（ホールコンピュータとの接続を行う）に区分されており、両者はケーブルにて接続されている。

【００３１】排出制御装置１０６は基枠体１１２に取付けられ、球の排出に必要な各種電気部品（例えば、排出ユニット１０５の電気的駆動源）の制御を行うもので、所定のケース内にこの制御機能を実現する制御基板が収納されて構成されている。遊技制御装置１０７は、役物遊技に必要な各種制御を行うもので、所定のケース内にこの制御機能を実現する制御基板が収納されて構成されている。役物中継基盤１０８は遊技盤１３に配置されている役物、サイドランプ５１、５２、変動入賞装置４５等と遊技制御装置１０７との間におけるケーブルの接続中継を行うものである。発射ユニット１０９は、遊技機１の前面下部に設けられた発射操作ノブ３４の操作に応じて、球を発射するための機構である。カードユニット接続基板１１０は球貸機２から延出するケーブル１２３を遊技機１に接続するためのもので、ケーブル１２３の端部にあるコネクタを受ける装着部材（例えば、メス型のコネクタ）を備えている。

【００３２】遊技盤１３の裏面側には、入賞球が流下可能な空間が形成されて入賞球を集合させる入賞球集合部材１４１が設けられており、この入賞球集合部材１４１は、例えば透明の樹脂製（ＰＣ樹脂等）で、遊技盤１３の各入賞口毎に入ったセーフ球（入賞球）で特図始動センサ１７２、カウントセンサ１７３、入賞センサ１７５ａ～１７５ｃ（図４参照）を通過した球を導く機能を有している。そして、この入賞球集合部材１４１によって導かれたセーフ球は下方の入賞球集合棚１４２によって集められ、次いで、入賞球流下樋１４３を通って球排出口１４４から遊技機１の外部に排出されるようになっている。因みに、従来は入賞球流下樋１４３にセーフユニットが配置される構成であったが、本実施の形態ではセーフユニットが設けられていないため、セーフ球は入賞球流下樋１４３を単に通過するのみである。入賞球集合棚１４２は基枠体１１２に形成され、合成樹脂部材により成形されている。また、入賞球集合樋１４３も同様に基枠体１１２に形成され、合成樹脂部材により成形されている。

【００３３】遊技盤１３の裏面側にはアウト球流下樋（図示省略）が設けられており、このアウト球流下樋は、遊技領域下部のアウト口４１に流入した球（アウト球）を流下させて、球排出口１４４から遊技機１の外部に排出する（すなわち、アウト球を遊技機１の裏面側へ流下案内する）ようになっている。なお、球排出口１４４は、前述したように入賞球流下樋１４３を通過してきた入賞球１１も同様に外部に排出する。電源供給ユニット１１１は排出制御装置１０６、遊技制御装置１０７、音制御装置１１３等の各制御装置に電源を供給するもので、詳細は図３で後述する。音制御装置１１３は、遊技機１の前面等に配設されたスピーカ（図示略）より、遊技状態に応じて各種効果音を適宜出力する制御を行うものであり、所定のケース内にこの制御機能を実現する制御基板が収納されて構成されている。音制御装置１１３は、遊技制御装置１０７の制御基板とケーブル接続されて、遊技状態を示す信号などの授受が行われるようになっている。

【００３４】発射制御装置１１５は、球の発射に必要な各種電気部品（例えば、発射ユニット１０９の電気的駆動源）の制御を行うもので、所定のケース内にこの制御機能を実現する制御基板が収納されて構成されている。表示制御装置１１６は、遊技制御装置１０７から出力される指令などに従ってセンター役物を制御して、センター役物の前面の表示部（すなわち、特別図柄表示装置４３の表示部）に所定の画像を表示させるもので、所定のケース内にこの制御機能を実現する制御基板が収納されて構成されている。装飾制御装置１１７は、遊技機１の前面等に配設された装飾用ランプ類の作動（点灯又は消灯）を制御するもので、やはり、所定のケース内にこの制御機能を実現する制御基板が収納されて構成されている。

【００３５】残賞球数表示器１１８は、例えば２組の７セグメント表示器からなり（後述の図９参照）、停電復旧時等に未払い出しの賞球（残賞球）がある場合に、保持されている記憶賞球数（例えば、７個賞球および１５個賞球）別に未払い出しの賞球数を表示するものである。残賞球数表示器１１８は排出制御装置１０６のケース（遊技機１の裏面側）に配置されるので、例えば遊技店員が確認のために見たり、あるいは遊技者にも見せたりしてトラブルを回避することが可能である。残賞球報知信号出力端子１１９は、例えば基枠体１１２に取付けられたコネクタで構成され、停電復旧時等に未払い出しの賞球（残賞球）があることを遊技機１外部に信号として出力する場合の端子であり、例えば遊技店の管理装置からの配線を、この残賞球報知信号出力端子１１９に接続することにより、管理装置に残賞球があることを知らせる。また、残賞球報知信号出力端子１１９を用いることにより、第３者機関で遊技機１を検査する場合、この

遊技機１が停電時からの復帰時に正確に残賞球排出が行われているかどうかのチェックを容易にできる。

【００３６】ここで、前述した残賞球有無表示器５９、残賞球数表示器１１８および残賞球報知信号出力端子１１９は、遊技機１の電源投入時に、ＲＡＭ２０３（記憶手段）の所定の賞球数情報記憶領域（後述の賞球データメモリエリア）に賞球数情報が保持されていた場合、保持されている賞球数情報に基づく遊技価値の供給を行っていることを報知する報知手段を構成する。なお、残賞球報知信号出力端子１１９は直接的に遊技価値の供給を行っていることを報知するものではないが、管理装置に残賞球があることを知らせることで、間接的に遊技価値の供給を行っていることを報知することになる。残賞球有無表示器５９は遊技者に対する報知、残賞球数表示器１１８および残賞球報知信号出力端子１１９は遊技店側への報知を行う。

【００３７】Ｃ．電源供給系統

図３は遊技機１における電源供給系統を示す図である。図３において、遊技機１には外部からＡＣ２４Ｖが供給されるようになっており、外部電源であるＡＣ２４Ｖはターミナル基盤１０３を介して間接的に電源供給ユニット１１１に分配される。電源供給ユニット１１１はＡＣ２４Ｖを直流に変換し、各種のＤＣ電圧を生成して各制御装置に供給する。具体的には、ソレノイド駆動用のＤＣ３０Ｖ、ランプ類駆動用のＤＣ２４Ｖ、センサ駆動用およびバックライト駆動用のＤＣ１２Ｖを駆動用電源として生成するとともに、各制御装置を動作させるための制御装置用電源としてＤＣ１２Ｖを生成する。そして、ＤＣ３０ＶおよびＤＣ１２Ｖを発射制御装置１１５に、ＤＣ２４ＶおよびＤＣ１２Ｖを排出制御装置１０６に、ＤＣ３２Ｖ、ＤＣ２４ＶおよびＤＣ１２Ｖを遊技制御装置１０７に、ＤＣ１２Ｖを音制御装置１１３に、ＤＣ３０Ｖ、ＤＣ２４ＶおよびＤＣ１２Ｖを装飾制御装置１１７に、ＤＣ１２Ｖを表示制御装置１１６に供給する。したがって、遊技制御装置１０７および排出制御装置１０６は、これら装置内で使用するための電源を別途構成された電源供給ユニット１１１（電源装置を構成）から供給される構成となっているとともに、電源供給ユニット１１１は遊技機１外部から電源（ＡＣ２４Ｖ）の供給を受けて、所要の電源を生成して排出制御装置１０６に供給する構成である。

【００３８】発射制御装置１１５は発射操作ノブ３４の回動量に応じて発射ユニット１０９（発射装置）制御し、回動量に対応した強さで遊技球を発射させる制御を行う。なお、発射制御装置１１５には排出制御装置１０６から発射イネーブル信号が入力されるようになっており、発射イネーブル信号は排出制御装置１０６側で何らかの異常が生じた場合に、発射ユニット１０９の発射動作を停止したり、あるいは異常が解消された場合に発射動作を可能にする信号である。また、発射制御装置１１５は遊技者により発射操作ノブ３４が操作されると、発射操作信号を排出制御装置１０６に出力するようになっている。なお、後述の他の実施の形態では、発射操作信号は遊技の実行により発生する遊技実行信号に相当し、この発射操作信号が排出制御装置１０６に対して入力されると、排出制御装置１０６は遊技価値供給開始条件が成立したと判断する。

【００３９】排出制御装置１０６は遊技制御装置１０７から送信された賞球データ（賞球数情報）に基づき、排出センサからの検出信号に基づいて排出ソレノイドへの通電を制御し、所定数の遊技球を排出させる制御を行う。また、排出制御装置１０６は球貸機２（いわゆるＣＲサンドユニット）との間で信号の授受を行いながら、球貸しに伴う制御を行う。ここで、球貸機２と排出制御装置１０６との間で行われる球貸し制御手順について説明する。便宜上、信号の授受は正論理で説明する。球貸機２は、排出制御装置１０６（すなわち、パチンコ遊技機１）から出力されるＰＲＤＹ信号がＨｉの状態であれば、排出制御装置１０６が球の排出制御が行える状態と判断する。球貸機２は、排出制御装置１０６が球の排出制御を行える状態であれば、球貸釦２２の操作を受け付け、球貸釦２２からの入力があれば、排出制御装置１０６にこれから球貸要求（ＢＲＱ信号）が行われる旨を連絡するＢＲＤＹ信号をＨｉにする。排出制御装置１０６は、ＢＲＤＹ信号がＨｉになると、球貸しのための球の排出制御を行う準備を行い、球貸要求信号であるＢＲＱ信号の監視を行う。

【００４０】球貸機２は、ＢＲＤＹ信号をＨｉにしてから所定時間経過後に、ＢＲＱ信号をＨｉにし、排出制御装置１０６はこのＢＲＱ信号のＨｉを受けると、球貸機２にＢＲＱ信号を受信したことを球貸機２に連絡するＥＸＳ信号をＨｉにするとともに、所定単位（例えば、ＢＲＱ信号１パルスで２５個）の球の排出を行い、この排出が終了すると、出力しているＥＸＳ信号をＬｏにしてＢＲＱ信号に基づく球の排出が終了したことを球貸機２に連絡し、いまだＢＲＤＹ信号がＨｉを継続していれば再びＢＲＱ信号の監視を行い、ＢＲＤＹ信号がＬｏになった場合は球貸し排出制御処理を終了する。一方、球貸機２はＢＲＱ信号をＨｉにした後、出力されたＥＸＳ信号のＨｉを確認すると、ＢＲＱ信号をＬｏにして、ＥＸＳ信号の監視を行う。このＥＸＳ信号のＬｏを確認すると、続けて球貸要求を行う場合は、上記同様にＢＲＱ信号をＨｉにし、また、球貸要求を行わない場合はＢＲＤＹ信号をＬｏにする。

【００４１】遊技制御装置１０７は遊技の総括的制御を行う制御装置であり、遊技盤１３面における遊技の進行を制御するとともに、遊技において発生した遊技価値を遊技者に供給するための賞球数情報を送信する。すなわち、遊技球の賞球制御に関する部分では、遊技盤１３の各入賞口４４、４５、４８～５０毎に設けられた入賞セ

ンサ１７２、１７３、１７５ａ〜１７５ｃにより遊技球の入賞が検出されると、予め設定された賞球数を排出制御装置１０６へ送信する。表示制御装置１１６は遊技制御装置１０７から送信された表示データに基づき、特別図柄表示装置４３の画像表示を制御するとともに、特別図柄表示装置４３に対して電源を供給している。装飾制御装置１１７は遊技制御装置１０７から送信された装飾データに基づき、サイドランプ等の発光を制御するとともに、この発光装飾部材に電源を供給している。音制御装置１１３は遊技制御装置１０７から送信された音データに基づき効果音を生成する等、効果音に関する制御を行う。

【００４２】Ｄ．制御系統

図４は遊技機１における制御系統を示す図である。図４において、遊技制御装置１０７はパチンコ遊技等に必要な役物制御を行うワンチップマイコンからなる遊技用演算処理装置（遊技用マイクロコンピュータ）１６０と、水晶の発振周波数を分周して所定のクロックを得るクロック生成回路（ＣＬＫ）１６１と、各種センサ信号を受け入れる入力インターフェース１６２と、出力インターフェース１６３とを含んで構成される。遊技用演算処理装置１６０はＣＰＵ、ＲＯＭ、ＲＡＭを内蔵しており、いわゆるアミューズチップ用のＩＣとして製造されている。

【００４３】入力インターフェース１６２には、変動入賞装置４５に入った球のうちいわゆる継続入賞（Ｖ入賞）した球を検出する継続センサ（スイッチ）１７１、特図始動入賞口（普通電動役物タイプの始動入賞口）４４への入賞を検出する特図始動センサ１７２、変動入賞装置４５に入った全ての球を検出するカウントセンサ１７３、普図始動ゲート４６、４７を球が通過したことを検出する普図始動ゲートセンサ１７４、遊技盤１３の一般入賞口４８〜５０に入賞した球を検出する入賞センサ１７５ａ〜１７５ｃからの信号が入力される。なお、遊技盤１３の一般入賞口がｎ個ある場合には、入賞センサはｎ個配置される。出力インターフェース１６３からは、表示制御装置１１６、装飾制御装置１１７、音制御装置１１３、発射制御装置１１５、普通図柄表示装置５２、普通変動入賞装置（すなわち、始動入賞口４４の普通電動役物）を駆動する普通電動役物ソレノイド１８１、変動入賞装置４５である大入賞口を開閉駆動する大入賞口ソレノイド１８２に信号が出力される。

【００４４】次に、排出制御装置１０６はＣＰＵ２０１、ＲＯＭ２０２、ＲＡＭ２０３、所定のクロックを得るクロック生成回路（ＣＬＫ）２０４、入力用インターフェース２０５、出力用インターフェース２０６、ロジック電源回路２０７、停電検出回路２０８、逆流防止用のダイオード２０９を含んで構成される。なお、各素子間はアドレスバス、データバス、電源線等で接続されている。ＣＰＵ２０１は遊技球の排出（賞球排出および貸球排出を含む）に必要な処理を行い、ＲＯＭ２０２は排出制御に必要なプログラム等を格納している。

【００４５】ＲＡＭ２０３はワークエリアとして使用されるもので、情報を記憶可能な記憶手段としての機能を有し、ＣＰＵ２０１とは別個の単独素子として構成されている。ＲＡＭ２０３は賞球数情報（本実施の形態では、賞球の払い出しは７個賞球および１５個賞球の２系統）を格納する賞球データメモリエリア（賞球数情報記憶領域）、各種データを格納する各種データメモリエリア、その他のワークメモリエリア等を有している。ここで、ＲＡＭ２０３の賞球データメモリエリアには、図５（ａ）に示すように、遊技機１を規制する風俗営業等の規制及び業務の適正化等に関する法律で決められた最小賞球数（最小賞球数情報に相当：最小の賞球数＝１であるから最小賞球数＝１となる）から最大賞球数（最大賞球数情報に相当：最大の賞球数＝１５であるから最大賞球数＝１５なる）までの各賞球数（各賞球数情報に相当：パチンコ遊技機では１個賞球〜１５個賞球の範囲内に規制されている）に対応してそれぞれ１バイトの大きさを有する賞球数加算メモリ（賞球数情報データ記憶要素に相当）が予め確保されて１５個形成されており、本実施の形態の場合、賞球データメモリエリアは１５バイト（１バイト×１５個）の容量を有している。好ましくは、１５バイト分の連続した領域を賞球データメモリエリアとして確保するのがよい。また、その他に電源投入時における賞球払い出しの優先順位を決定した場合の優先順メモリのエリア（図５（ｃ）参照）が設けられている。

【００４６】ＣＰＵ２１０は遊技制御装置１０７から送信された賞球数情報を、当該賞球数情報に対応したＲＡＭ２０３の賞球数加算メモリに順次加算記憶させる処理を行い、賞球数加算メモリに記憶された加算記憶に基づいて排出制御装置１０６は排出処理を行う。例えば、排出制御装置１０６に接続される遊技制御装置１０７（遊技盤１３）における設定された賞球数が７個（例えば、始動入賞の遊技価値および一般入賞の遊技価値）、あるいは１５個（例えば、変動入賞装置（大入賞口）４５の遊技価値）という構成である場合、ＲＡＭ２０３に予め確保された賞球データメモリエリアの賞球数７個加算メモリ、賞球数１５個加算メモリを使用して遊技制御装置１０７から送信される賞球数情報に対応して該当する加算メモリに賞球数情報を加算していく。具体的には、始動入賞あるいは一般入賞がある度に遊技制御装置１０７から排出制御装置１０６のＲＡＭ２０３の賞球数加算メモリのうちの賞球数７個加算メモリというエリアに賞球数情報が加算記憶され、この加算記憶に基づいて排出制御装置１０６のＣＰＵ２１０は７個賞球の排出処理を行う（例えば、後述の賞球排出の方の第１排出ソレノイド２３３を駆動（オン）して排出ユニット１０５から遊技球を排出させる）。ただし、実際には７個賞球および１

５個賞球が混在して発生するので、遊技機１の電源投入時の残賞球排出のときには、後述のように払い出しの優先順位を決定して賞球排出を行う。一方、変動入賞装置（大入賞口）４５への入賞がある度に遊技制御装置１０７から排出制御装置１０６のＲＡＭ２０３の賞球数加算メモリのうちの賞球数１５個加算メモリというエリアに賞球数情報が加算記憶され、この加算記憶に基づいて排出制御装置１０６のＣＰＵ２１０は１５個賞球の排出処理を行う。

【００４７】ここで本実施の形態では、ＲＡＭ２０３の記憶内容が後述のようにコンデンサ２１２によってバックアップ可能な構成であり、そのため特に遊技機１の電源投入時（停電復旧時を含む）に、ＲＡＭ２０３の賞球データメモリに賞球数情報が保持されていた場合、保持されている賞球数情報（加算記憶を含む）全体を参照し、その参照結果から賞球払い出し（遊技価値供給）の優先順位を決定する処理を行い、決定した優先順位（図５（ｃ）の優先順メモリに書き込む）で賞球払い出しを行うようになっている。なお、優先順位を決定するのは、あくまでも電源投入時であり、通常時には優先順位決定を行わない。電源投入時における賞球払い出しの優先順位決定は、以下のような方法で行う。すなわち、電源投入時における賞球数加算メモリの保持データ（図５（ｂ）で示す）をみて、各賞球数（７個、１５個）の加算記憶から複数賞球数が保持されていた場合、賞球数の大きいものを優先して払い出すように賞球払い出しの優先順位を決定（賞球数の大小により遊技価値供給の差をつけ、賞球数の大きい賞球数情報を優先した優先順位とすることに相当）する。例えば、図５（ｂ）に示すように賞球数７個加算メモリの保持データが１０、賞球数１５個加算メモリの保持データが７であった場合、賞球数の大きい１５個賞球を優先して払い出すように優先順位を決定し、それを図５（ｃ）に示す優先順メモリに書き込む。ＣＰＵ２１０は優先順メモリに書き込まれた優先順位をみて、賞球の払い出し処理を行う。

【００４８】ＲＡＭ２０３に対して賞球数情報を当該賞球数情報に対応した賞球数加算メモリに加算記憶させる処理、および遊技機１の電源投入時にＲＡＭ２０３の賞球数加算メモリに賞球数情報が保持されていた場合、保持されている賞球数情報全体を参照し、その参照結果から賞球の払い出しの優先順位を決定する処理は、ＣＰＵ２０１によって行われ、ＣＰＵ２０１の該当プログラムは情報記憶処理手段および優先順位決定手段の機能を実現する。また、ＲＡＭ２０３の賞球数加算メモリにおける加算記憶に基づいて遊技者に賞球としての遊技球（遊技価値）を供給する処理、および優先順位決定手段によって決定された所定の優先順位で遊技球（遊技価値）の供給を行う処理は、ＣＰＵ２０１によって行われ、ＣＰＵ２０１の該当プログラムは遊技価値供給処理手段の機能を実現する。なお、排出処理に係わった賞球数情報の消去は、例えば賞球排出が終了した時、あるいは賞球排出が開始される時に実行される。

【００４９】ロジック電源回路２０７には電源供給ユニット１１１（電源装置を構成）からＤＣ１２Ｖが供給されており、ロジック電源回路２０７はＤＣ１２ＶをＤＣ５Ｖに変換して上記ＣＰＵ２０１、ＲＯＭ２０２、ＲＡＭ２０３等の各素子の動作に必要な電源を供給する。ＲＡＭ２０３には不可逆手段として機能するダイオード２０９を介してロジック電源回路２０７からＤＣ５Ｖが供給される。また、電源供給ユニット１１１からのＤＣ５Ｖは配線２１１ａ、２１１ｂを通して電源供給ユニット１１１の内部に配置されたコンデンサ（スーパキャパシタ）２１２にも供給されるようになっている。コンデンサ２１２は単に電源供給ユニット１１１の基板上に配置されているだけで（あるいは基板上でなく別体でもよい）、電源の供給は排出制御装置１０６側のロジック電源回路２０７から受けている。配線２１１ａ、２１１ｂの途中にはオス／メスタイプのコネクタ（図示略）が設けられており、コネクタにより配線２１１ａ、２１１ｂは電源供給ユニット１１１側と排出制御装置１０６側とに分離可能である。

【００５０】ＲＡＭ２０３とコンデンサ２１２の接続状態を詳しく説明すると、ＲＡＭ２０３の電源端子は排出制御装置１０６内で生成されたロジック電圧をダイオード２０９を介して受けるように接続され、この電源端子は更に電源供給ユニット１１１に配置したコンデンサ２１２のプラスの電位に接続されている。一方、コンデンサ２１２は排出制御装置１０６のロジック電源回路２０７が生成したロジック電圧であるＤＣ５Ｖの供給を受けて充電状態に維持されるとともに、コンデンサ２１２のグランドレベルは配線２１１ｂを介して排出制御装置１０６のグランドに導通するようになっている。したがって、排出制御装置１０６内で生成されたロジック電源は、ＲＡＭ２０３の電源端子にダイオード２０９を介して供給されてＲＡＭ２０３の作動を可能にするとともに、コンデンサ２１２も充電するようになっている。なお、ダイオード２０９を介してコンデンサ２１２を充電しているので、停電時はＲＡＭ２０３のみをバックアップする構成になっており、他の回路にはコンデンサ２１２の電圧は供給されない。コンデンサ２１２は、ＲＡＭ２０３（記憶手段）における賞球数情報の記憶内容が保持されるようにバックアップするバックアップ手段を構成する。また、特に本実施の形態ではコンデンサ２１２はＲＡＭ２０３（記憶手段）の賞球数情報の記憶内容が保持されるべく、ＲＡＭ２０３（記憶手段）に対してバックアップ電源を供給可能なバックアップ電源手段によってバックアップ手段が構成されている。このコンデンサ２１２（バックアップ電源手段）は排出制御装置１０６の外部（本実施の形態では電源供給ユニット１１１）に設けた構成になっている。

【００５１】また、本実施の形態ではバックアップ電源手段（バックアップ手段）としてのコンデンサ２１２は、遊技機１外部からの間接的な電源供給が断たれることにより電源供給ユニット１１１（電源装置）から排出制御装置１０６への電源供給が断たれた場合に、ＲＡＭ２０３（記憶手段）の記憶内容が保持されるようにＲＡＭ２０３（記憶手段）に対してバックアップ電源を供給する素子となっており、かつバックアップ電源手段（バックアップ手段）は電源供給ユニット１１１（電源装置）に設けられている構成となっている。なお、バックアップ電源手段（バックアップ手段）はコンデンサに限らず、例えば電池でもよい。また、電源によるバックアップではなく、例えばＲＡＭ（記憶手段）を不揮発性素子（例えば、ＥＥＰＲＯＭ、フラッシュメモリ等）で構成することにより、自らが賞球数情報をバックアップ可能なように構成してもよく、その場合はＲＡＭ自身がバックアップ手段を含むものになる。停電検出回路２０８は電源供給ユニット１１１からロジック電源回路２０７への電源供給が断たれたことを検出（例えば、ＤＣ１２Ｖが所定の電圧まで低下したとき停電として検出）するもので、停電になると、ＣＰＵ２１０に強制的に割り込みがかかってＣＰＵ２１０の動作を停止させる。

【００５２】排出制御装置１０６の入力用インターフェース２０５には遊技機１にある遊技球を外部に抜き取る球抜き通路の切り替え状態を検出する球抜きセンサ２２１、賞球排出用の第１排出センサ２２２、球貸し用の第２排出センサ２２３、賞球用通路（予備球通路）内の半端センサ２２４、下皿３２の満杯状態（球の過剰貯留）を検出するオーバフローセンサ２２５、ＲＡＭ２０３の内容をクリアするリセットスイッチ（ＳＷ）２２６、店員が強制的に賞球排出を行わせるために操作する球排出スイッチ６０からの信号が入力されている。なお、本実施の形態では電源投入時（例えば、停電復旧時）に、ＲＡＭ２０３の賞球データメモリに未払い出しの賞球数情報が保持されていた場合、店員が球排出スイッチ６０を操作して賞球払い出しを行う構成であるため、球排出スイッチ６０からの信号を排出制御装置１０６に入力しているが、これに限らず、例えば後述の他の実施の形態に示すように遊技実行信号に基づいて未払いの賞球払い出しを行う構成のときには、発射操作信号ＨＳ（例えば、遊技者が発射操作ノブ３４を操作するとオンする信号）が入力用インターフェース２０５に入力される構成となる。したがって、本実施の形態では発射操作信号ＨＳを排出制御装置１０６で利用していないが、説明の都合上、図４に示している。

【００５３】また、出力用インターフェース２０６からは残賞球有無表示器５９、残賞球数表示器１１８、残賞球報知信号出力端子１１９（機能は前述）、７セグメント表示器２３１、遊技機１にある遊技球を外部に抜き取る球抜き通路を切り替えるための球抜きソレノイド２３２、賞球排出用の第１排出ソレノイド２３３、球貸し用の第２排出ソレノイド２３４に制御信号が出力される。残賞球有無表示器５９は図１に示したように、遊技機１の側部に配置され、停電復旧時等における未払い出しの賞球の有無を表示して報知する。残賞球数表示器１１８はＲＡＭ２０３の賞球データメモリに記憶されている現在の賞球数情報の記憶数を表示する７セグメントタイプのＬＥＤ表示器であり、図９（ａ）に示すように２個のＬＥＤを併設した構成となっている。すなわち、残賞球数表示器１１８は賞球７個に対応する１桁のＬＥＤと、賞球１５個に対応する２桁のＬＥＤとを有しており、「７」、「１５」という２つの賞球数情報がいくつあるかを表示する。例えば、図９（ｂ）に示すように、賞球７個の賞球数が２個、賞球１５個の賞球数が０個というように７セグメントのＬＥＤで表示する。これは、現在の賞球数情報の記憶数を表示することで、未排出分の賞球数がいくつあるかを判断可能にして、遊技者と遊技店との間のトラブル発生を回避できるようにするものである。残賞球有無表示器５９、残賞球数表示器１１８および残賞球報知信号出力端子１１９は、報知手段を構成する。

【００５４】次に、作用を説明する。

「排出制御処理」図６は排出制御装置１０６により行われる排出制御処理のプログラムを示すフローチャートである。排出制御装置１０６は、まずステップＳ１で電源投入であるか否かを判別する。ここでの電源投入の判断には、停電からの復旧も含まれる。電源投入のときはステップＳ２に進んで賞球データメモリエリア（賞球数情報記憶領域）に賞球数情報（賞球データ）が有るか否かを確認し、記憶がなければステップＳ３で初期化処理を行い、ステップＳ９に移行する。初期化処理では、ＲＡＭ２０３のワークエリアデータのクリア、各種初期設定等を行う。

【００５５】一方、ステップＳ２で賞球データメモリエリアに賞球数情報（賞球データ）がある場合（例えば、未払いの賞球がある場合）には、ステップＳ４に進んで残賞球報知処理を行う。残賞球報知処理では、遊技機１の前面側に配置されている残賞球有無表示器５９により未払いの賞球がある旨を知らせる報知を行うとともに、残っている賞球数情報を排出制御装置１０６に設けられた残賞球数表示器１１８で表示（例えば、図９（ｂ）に示す表示）したり、さらには残賞球報知信号出力端子１１９を介して未払いの賞球がある旨を知らせる信号を遊技機１外部に出力したりする。なお、残賞球数表示器１１８は停電復帰時に、例えば店員が遊技機１の裏面側を開いて確認する。図９（ａ）は賞球データメモリに保持データが無い場合であり、図９（ｂ）は７個賞球＝２、１５個賞球＝０という保持データを示している。未払いの賞球が排出されている間は、残賞球数表示器１１８の値は減算表示されていくので、これを視認することで、

未払いの賞球が確実に排出されていることを確認できる。本実施の形態では、賞球データメモリの保持データを表示する場合に、「７個賞球」、「１５個賞球」というように区別しているが、これに限らず、例えば図９（ｃ）に示すように「賞球小」、「賞球大」という態様で保持データを表示するようにしてもよい。このようにすると、例えば遊技盤により賞球数が異なるような場合に、いちいち５個賞球／１３個賞球、あるいは７個賞球／１３個賞球というように明確に賞球数を表示した態様にする必要がなく、残賞球数表示器１１８に汎用性を持たせることができ、コストも低減できる。

【００５６】未払いの賞球を払い出す前は残賞球有無表示器５９を点灯（点灯状態に維持）し、後述のステップＳ８により未払い分の賞球が払い出されている間は残賞球有無表示器５９を点滅させる処理を行う。これにより、遊技者あるいは店員に未払い賞球の処理をどのようにして行っているかを明確に認識させることができる。また、残賞球数表示器１１８に賞球数情報が表示されることにより、未排出分の賞球数がいくつあるかを遊技店員へ報知したり、トラブル時に遊技店員による遊技者への確認を行うことができる。さらに、残賞球報知信号出力端子１１９から未払いの賞球がある旨を知らせる信号が遊技機１外部の管理装置に出力されることにより、管理装置側でも未払いの賞球があることの確認をすることができる。

【００５７】次いで、ステップＳ５で排出開始条件が成立しているか否かを判別する。これは、遊技球の排出を行える準備ができているかどうかを判断するもので、半端センサ２２４に球があり、下皿３２がオーバーフローではなく（オーバフローセンサ２２５がオフ）、賞球排出用の第１排出センサ２２２に球があるとき、排出開始条件が成立する。排出開始条件が成立していなければステップＳ５に待機し、排出開始条件が成立すると、ステップＳ６に進んで球排出スイッチ６０の入力があるか否かを判別する。これは、電源投入時（停電復旧時等）に、店員が所定の鍵を挿入して球排出スイッチ６０をオンさせたかどうかを判断するものである。例えば、残賞球有無表示器５９が点灯していることを確認した店員が未払いの賞球があると認識した場合に、強制的に賞球排出を行わせる操作を行う場合である。球排出スイッチ６０の入力がなければ、このステップＳ６に待機し、球排出スイッチ６０の入力操作が行われると、ステップＳ７に進んで賞球データメモリ優先処理を行う。賞球データメモリ優先処理では、電源投入時における賞球数加算メモリの保持データの全体を参照し、その参照結果から複数賞球数が保持されていた場合、賞球数の大きいものを優先して払い出すように賞球払い出しの優先順位を決定し、優先順メモリに書き込む。

【００５８】具体例で説明すると、遊技制御装置１０７から送信された７個賞球、１５個賞球という賞球数情報は、ＲＡＭ２０３に予め確保された賞球データメモリエリアの賞球数７個加算メモリ、賞球数１５個加算メモリにそれぞれ加算記憶されていき、このとき、例えば賞球数７個加算メモリ＝１０、賞球数１５個加算メモリ＝７という状態のとき停電になったとすると、そのデータはバックアップされて保持される。その後、停電から復旧すると、電源投入時の保持データは図５（ｂ）に示すように各賞球数（７個、１５個）に対応した加算記憶の保持データ（７個賞球が１０、１５個賞球が７）となっている。このとき、賞球数の大きいのは１５個賞球であるから、電源投入時の優先順としては１５個賞球を優先して払い出すように賞球払い出しの優先順位を決定し、その決定結果を図５（ｃ）のように優先順メモリに書き込む。すなわち、１５個賞球の順位＝１、７個賞球の順位＝２と書き込む。

【００５９】次いで、ステップＳ８で賞球排出処理を行う。賞球排出処理では、賞球排出メモリエリアの優先順メモリに書き込まれたデータに従って排出ユニット１０５（第１排出ソレノイド２３３、第１排出センサ２２２、アクチュエータ等を含むユニット）を駆動制御して賞球排出を行ったりする。例えば、上記例のように優先処理で賞球排出メモリエリアの優先順メモリに１５個賞球の順位＝１、７個賞球の順位＝２と書き込まれていた場合には、排出ユニット１０５が駆動されて１５個賞球（変動入賞装置（大入賞口）４５における賞球数）が優先して払い出される。そして、１５個賞球の払い出しが終了すると、７個賞球の払い出しが行われる。なお、未払い分の賞球排出が行われている間は、残賞球有無表示器５９が点滅して遊技者あるいは店員に報知される。ステップＳ８を経ると、ステップＳ２に戻ってループを繰り返す。

【００６０】ステップＳ７の機能は、優先順位決定手段が記憶手段（ＲＡＭ２０３）の所定の賞球数情報記憶領域（賞球データメモリエリア）に保持されている賞球数情報のうち、賞球数の大小により遊技価値供給の差をつけ、賞球数の大きい賞球数情報を優先した優先順位とすることに相当する。このように、電源投入時における賞球数加算メモリの保持データの全体を参照し、賞球数の大きいものを優先して払い出すので、未払い出しの球を遊技者が望む一定量以上すぐに払い出すことができる。

【００６１】ここで、賞球データメモリ優先処理の変形例について説明する。

「変形例」本実施の形態では、電源投入時における賞球数加算メモリの保持データの全体を参照し、賞球数の大きいものを優先して払い出しているが、これに限らず、例えば電源投入時の賞球数加算メモリの保持データの全体を参照し、各入賞球毎の入賞球数の大きいものを優先して払い出すようにしてもよい。具体的には、例えば図５（ｂ）に示すように、賞球数加算メモリの保持データが賞球数７個加算メモリ＝１０、賞球数１５個加算メモ

リ＝７という状態であると、賞球数７個加算メモリの方が入賞球数が大きいので、これを選択し、７個賞球を優先し、順位メモリには図５（ｄ）に示すように７個賞球の順位＝１、１５個賞球の順位＝２と書き込み、この順位に従って賞球の払い出しを行う。この変形例の機能は、優先順位決定手段が記憶手段（ＲＡＭ２０３）の所定の賞球数情報記憶領域（賞球データメモリエリア）に保持されている賞球数情報のうち、各賞球数毎の入賞球数の大小により遊技価値供給の差をつけ、入賞球数の大きい賞球数情報を優先した優先順位とすることに相当する。

【００６２】このような構成であると、各入賞球毎の入賞球数の大きいものが優先して排出処理されるので、以下の効果がある。

①何れかの未払い出しの賞球（例えば、１５個賞球）のみが突出して記憶されることがなくなり、賞球データメモリにおける各賞球数加算メモリの記憶量がすぐに均一化する。

②入賞球数の多い賞球数を先に排出処理するので、賞球データメモリに記憶される賞球数加算メモリの保持データがメモリオーバになるのを防止することができる。

③遊技者は、連続排出される球でどの賞球が多く賞球データメモリに記憶されたのかが明確にわかる。例えば、球の排出音がどの程度続くかで、その賞球がわかり、７個賞球なのかあるいは１５個賞球なのかを区別できる。

④例えば、大当りの最中に、停電になって変動入賞装置（大入賞口）４５への入賞記憶（つまり、賞球数１５個加算メモリの記憶）が極端に多くなっていても、停電復帰後にすぐに一番入賞数の多い変動入賞装置（大入賞口）４５への入賞記憶から優先して払い出すことができ、停電前に一番入賞していた入賞口に対する賞球が最初に出てくる。したがって、遊技者が最も印象に残っていた賞球排出を行うことができ、遊技者が抱きかねない入賞口に入賞した球に対する賞球がきちんと行われているかどうかという疑いをもたれるのを未然に防ぎ、遊技者に猜疑心を与えるのを防止できる。

【００６３】さて、再びフローに戻り、ステップＳ１で電源投入時でなければ、通常時における排出処理を行う。まず、ステップＳ９に進み、排出開始条件確認処理を行う。これは、遊技球を排出できる状態か否かを監視し、排出できる状態のときに排出条件成立フラグをセットするものである。次いで、ステップＳ１０で貸球排出処理を行う。これは、球貸機２からの球貸し指令情報等に基づいて排出制御装置１０６が貸し球の排出を行うものである。すなわち、プリペイドカードに基づく球貸しを遊技者にすべく、球貸機２と間でやり取りされる球貸制御情報に基づく貸し球排出制御を行う。なお、貸し球排出制御は、賞球排出制御に優先して行われる。次いで、ステップＳ１１で通常時（電源投入時以外）の賞球排出処理（詳細はサブルーチンで後述）を行う。ステップＳ１１を経ると、ステップＳ１に戻ってループを繰り返す。

【００６４】「通常時の賞球排出処理」次に、図７を参照して通常時の賞球排出処理（ステップＳ１１）のサブルーチンを説明する。このサブルーチンでは、まずステップＳ２１で賞球データがあるか否か、すなわち、遊技制御装置１０７から受信した賞球数情報が賞球データメモリエリア（遊技価値情報記憶領域）に書き込まれているかどうかを確認し、賞球データがなければメインルーチンにリターンする。賞球データがあれば、ステップＳ２２で排出開始条件成立フラグ（このフラグのセット／リセットはステップＳ９で行われる）があるか否かを判別し、排出開始条件成立フラグがセットされていなければ、遊技球の排出準備が整っていないので、このままメインルーチンにリターンする。一方、排出開始条件成立フラグがセットされていると、ステップＳ３３に進んで賞球排出処理（ステップＳ８と同様）を行い、メインルーチンにリターンする。なお、通常時の賞球排出処理では、賞球データメモリ優先処理（ステップＳ６と同様の処理）は行わない。

【００６５】また、遊技制御装置１０７から送信される賞球数情報等は図示しない賞球数情報受信処理により行われる。具体的には、遊技制御装置１０７から賞球数情報等が送信されるとＣＰＵ２０１に割り込みがかかり（マスカブル割り込み）、賞球数情報受信処理が実行される。この賞球数情報受信処理では、送信された賞球数情報等をＲＡＭ２０３の該当するメモリ領域に記憶させる処理が行われる。すなわち、上述したように、賞球数情報が５個賞球の場合には、これに該当する賞球データメモリエリアの賞球数５個加算メモリに１を加算する処理を行う。ここで、賞球数情報受信処理では、送信された賞球数情報等をそのままＲＡＭ２０３の所定領域に記憶する処理を行い、メイン処理側で、前記所定領域に記憶れれた賞球数情報等に基づく賞球数データメモリへの設定処理（例えば、賞球数加算メモリへの加算処理）を行うようにしてもよい。

【００６６】「停電処理」図８は排出制御装置１０６により行われる停電処理のプログラムを示すフローチャートである。停電処理は、ノンマスカブル（ソフト的にマスクがかけられない）の割り込み処理として処理され、停電検出回路２０８により電源供給ユニット１１１から供給される電圧が降下したとき、例えばＤＣ１２Ｖの電圧が所定の電位まで降下したことが検出されたときにＣＰＵ２０１に強制的に割り込み（ＮＭＩ：ノンマスカブルインタラプト）がかけられた時に、ステップＳ３１においてＣＰＵ停止処理を行うもので、ステップＳ３１の処理が行われるとＣＰＵ２０１を停止して停電に備える。これは、停電の場合にＣＰＵ２０１が不安定になり、ＲＡＭ２０３に不定な値が書き込まれないように、ＣＰＵ２０１が正常に動作できる電圧時（完全にダウン

する前に）にＣＰＵ２０１を停止させてＲＡＭ２０３に記憶されている内容を担保するためである。

【００６７】このように本実施の形態では、予めパチンコ遊技機１が賞球できる決められた賞球数分の全てに対応可能なメモリをＲＡＭ２０３の賞球データメモリエリア（遊技価値情報記憶領域）に賞球数加算メモリ（遊技価値データ記憶要素）として個別に１５個分だけ用意しておき、遊技制御装置１０７から送信された賞球数情報を、当該賞球数情報に対応したＲＡＭ２０３の賞球数加算メモリに順次加算記憶させる処理を行い、かつＲＡＭ２０３における賞球数情報の記憶内容が保持されるようにバックアップし、遊技機１の電源投入時に、ＲＡＭ２０３の賞球数加算メモリに賞球数情報が保持されていた場合、保持されている賞球数情報全体を参照し、その参照結果から未払い賞球供給の優先順位を決定して賞球排出を行う。また、セーフユニットを設けず遊技盤１３の各入賞口４４、４５、４８～５０に入賞センサ１７２、１７３、１７５ａ～１７５ｃを設けて、これらの入賞センサ１７２、１７３、１７５ａ～１７５ｃで入賞球を検出した段階で、遊技制御装置１０７から順次排出制御装置１０６に賞球数情報を送信して、この送信に係わった入賞球は、１個宛停留されることなく（セーフユニットがないので）、遊技機１外へ排出される。そして、排出制御装置１０６では遊技制御装置１０７から順次送信された賞球数情報をＲＡＭ２０３の賞球数加算メモリに順次加算記憶していく。この場合、遊技制御装置１０７および排出制御装置１０６は、これら装置内で使用するための電源を別途構成された電源供給ユニット１１１（電源装置）から供給される構成とし、排出制御装置１０６には遊技制御装置１０７から送信された賞球数情報を当該賞球数情報に対応した賞球数加算メモリ（遊技価値データ記憶要素）に順次加算記憶するＲＡＭ２０３（記憶手段）を有し、ＲＡＭ２０３の記憶内容が保持されるべくＲＡＭ２０３に対してバックアップ電源を供給可能なコンデンサ２１２（バックアップ手段：バックアップ電源手段）を、排出制御装置１０６の外部である電源供給ユニット１１１に設けている。また、残賞球有無表示器５９、残賞球数表示器１１８および残賞球報知信号出力端子１１９を設けて、未払い賞球排出があることを報知している。したがって、以下の効果を得ることができる。

【００６８】①セーフユニットを設けずに高速な賞球排出処理を実現しつつ、ＲＡＭ２０３に賞球数を記憶している状態で遊技機１の電源が遮断されても、賞球数情報が一切消去されることなく保持することができ、例えば大当たり中の大量の賞球数記憶といった場合であっても、すべての賞球を確実に払い出しすることができる。したがって、遊技者に損害を与えることがなくなり不平不満を未然に防げ、よって遊技店と遊技者とのトラブルを防ぐことが可能となる。特に、停電復帰時、賞球数の少ない遊技球の排出が連続したり、あるいは賞球数の少ない賞球排出の遊技球が先に排出されてしまって上皿に球が溜まるのに時間がかかるという欠点を解消することができる。したがって、遊技者がすぐに遊技を行えるので、停電時などで売り上げが一時的に落ちてしまっても、停電復旧後における遊技店での売り上げを向上させることができる。また、停電復帰時に、遊技機１に保持された賞球数情報に基づいて賞球の払い出しを行う際に、従来と異なり、賞球の払い出しペースが遅いとか、一定量の球がすぐに確保できないという状態を解消することができ、遊技者に不満感を与えることがなくなるとともに、賞球の払い出しも遅れないので、遊技が中断される事態もなくなる。

【００６９】さらに、例えば停電復帰時に、直ちに遊技を続行したいという遊技者に対して、球がすぐになくなるという状態が解消されるので、遊技が断続的になってしまうということがない。また、未払い出しの賞球の早期排出を望みむという遊技者の要求に応えることができる。未払い出し賞球の状況を把握してから遊技を行いたいという遊技者は未払い出しの賞球が一定以上にならないと、遊技を始めたくないが、本実施の形態では、すぐに効率よく賞球の払い出しが行われるので、未払い出し賞球の状況を把握する時間を短くすることができる。特に、停電からの復旧時に大勢の遊技者が上述したような要求を行っても、これに応えることができる。また、停電復帰時に、全ての遊技機１での遊技者の遊技再開が遅れないので、遊技店の売り上げが極端に減少することを回避できる。なお、停電復帰時に限らず、例えば開店中に点検、整備の必要があって、遊技機１の電源を一時的にオフしてから復旧するような場合も上記同様の効果がある。

【００７０】②電源供給ユニット１１１（電源装置）に排出制御装置１０６の記憶内容（すなわち、ＲＡＭ２０３の記憶内容）をバックアップするバックアップ電源手段を設ける構成であれば、通常のＲＡＭ２０３を使用して記憶内容をバックアップすることができ、例えばＥＥＰＲＯＭのような特別な電子部品を用いる必要がない。したがって、コスト低減が可能であり、またＥＥＰＲＯＭのように書き込み限度数を気にする必要がないという効果がある。

③電源供給ユニット１１１（電源装置）を排出制御装置１０６の外部に設け、そのうえ、排出制御装置１０６のＲＡＭ２０３をバックアップさせる機能を電源供給ユニット１１１（電源装置）に設けたので、排出制御装置１０６の回路を小型化することができる。したがって、遊技機１の裏面空間のスペースを大きくとらずに済み、遊技機１裏面をすっきりとした視認性の良いものとすることができるとともに、不正の抑止も可能になる。

④電源投入時（例えば、停電復帰時）に、賞球数情報全体を参照して優先した賞球の払い出しが行われるので、

記憶されている未払い出しの球に対して遊技者が望む一定量以上の払い出しをすぐに行うことができる。したがって、遊技者が電源投入時にすぐに遊技を行っても、遊技が中断されにくいという効果がある。

【００７１】⑤複数賞球数が未払い出しとして残っている場合、賞球数の大きいものを優先して払い出すことにより、少ない賞球払い出しを後回しにでき、遊技者が望む一定量以上の払い出しをすぐに行うことができる。

⑥遊技制御装置１０７から送信された賞球数情報を当該賞球数情報に対応した賞球数加算メモリ（遊技価値データ記憶要素）に順次加算記憶する構成であるので、未払い分の賞球払い出しのときに、賞球数加算メモリに保持されている加算記憶の全体を比較して優先排出の処理を行おうとする場合に、単に各賞球数情報の加算記憶値を比較判断するだけで優先順位の決定ができるので、処理しやすく、プログラムも簡単で済む。

⑦残賞球有無表示器５９、残賞球数表示器１１８および残賞球報知信号出力端子１１９を設けて未払い賞球があることの報知や、未払い賞球の排出をしていることの報知を行っているので、遊技者あるいは店員に未払い賞球の処理をどのようにして行っているかを明確に認識させることができる。特に、未払い出しの賞球排出を行っていることが遊技店側にわかることで、遊技店側では遊技機１から通常の排出よりも多くの排出があっても、不正排出との区別ができる。また、遊技者側では、何の排出であるかを容易に把握することができ、無用なトラブルを防止することができる。すなわち、未払い出し分の賞球数がいくつあるかが判断できるので、遊技者と遊技店との間のトラブル発生を回避できる。

【００７２】次に、本発明の他の実施の形態について説明する。

「第２の実施の形態」第２の実施の形態は、排出制御装置１０６における処理プログラムの内容が第１の実施の形態と異なる。なお、第２の実施の形態では、前記第１の実施の形態に比べて排出制御装置１０６の機能は一部異なるが、説明の都合上、同じ符号で説明する。図１０は、第２の実施の形態における排出制御処理のプログラムを示すフローチャートであり、このプログラムではステップＳ４１の内容のみが第１の実施の形態と異なる（その他は同一番号を付す）。ステップＳ４１では、発射操作信号ＨＳの入力があるか否かを判別する。発射操作信号ＨＳは遊技者が発射操作ノブ３４を操作したときに排出制御装置１０６に入力され、遊技者が遊技を再開したことが検出される。ステップＳ４１でＮＯのときは、このステップに待機し、ＹＥＳになるとステップＳ７に抜ける。したがって、電源投入時（例えば、停電復帰時）に、ＲＡＭ２０３の賞球データメモリに未払い出しの賞球数情報が保持されていた場合、遊技者が遊技を再開すると、自動的に未払い分の賞球払い出しが行うことができ、店員の手を煩わせることがないという利点がある。この第２の実施の形態は球排出スイッチ６０を操作して残賞球払い出しを行わない場合であり、図４で球排出スイッチ６０の代りに、発射操作信号ＨＳが入力用インターフェース２０５に入力される構成となる。なお、ステップＳ４１では発射操作信号ＨＳの入力があるか否かを判別していたが、別の変形例として、例えば遊技実行信号として予め構成されている賞球データ信号を利用するものも考えられる。その場合、ステップＳ４１で入賞口への入賞時に遊技制御装置１０７から排出制御装置１０６に送信される賞球データ信号の入力があるか（すなわち、賞球データの入力があるか）否かを判別するような処理とする。そのようにした場合、図４で球排出スイッチ６０および発射操作信号ＨＳは入力インターフェース２０５に入力されない構成となる。賞球データの入力を判断する構成にした場合も、自動的に未払い分の賞球払い出しが行うことができ、店員の手を煩わせることがないという利点がある。

【００７３】「第３の実施の形態」第３の実施の形態は、図１１に示すように３系統の賞球を行う場合の適用例である。なお、第３の実施の形態では、前記第１の実施の形態に比べて排出制御装置１０６、遊技制御装置１０７、ＲＡＭ２０３の機能は一部異なるが、説明の都合上、同じ符号で説明する。遊技制御装置１０７は電源投入時（遊技機１に電源を投入すると、遊技制御装置１０７および排出制御装置１０６にも電源が投入される）、排出制御装置１０６に対して当該遊技制御装置１０７に予め設定されている設定賞球数情報（遊技盤１３の入賞口における例えば３系統の５個、７個、１３個という情報）を送信する。排出制御装置１０６は、設定賞球数情報を受信すると、当該排出制御装置１０６に接続されている遊技制御装置１０７の設定賞球数情報をＲＡＭ２０３に形成した設定賞球データ定義メモリに記憶する。ＲＡＭ２０３には、図１１（ａ）に示すように、設定賞球データ定義メモリエリア（遊技価値情報記憶領域）が設けられており、例えば５個、７個、１３個という賞球数情報を受信すると、設定賞球データ定義メモリに賞球数定義５個、賞球数定義７個、賞球数定義１３個という予め形成された領域に記憶する。また、同時に、この設定賞球データ定義メモリに対応して予め確保されている賞球データメモリに賞球数加算メモリをセットで割り付ける。

【００７４】例えば、設定賞球データ定義メモリの賞球数定義５個、賞球数定義７個、賞球数定義１３個に対応して、セットで賞球データメモリに賞球数５個加算メモリ、賞球数７個加算メモリ、賞球数１３個加算メモリという領域が形成され、割り付ける構成になっている。そして、遊技制御装置１０７から送信された賞球数情報を該当する割り付けられた賞球データメモリに加算記憶していく。例えば、送信された賞球数情報が５個賞球情報であれば、設定賞球データ定義メモリの賞球数定義５個

に対応して割り付けられている賞球数５個加算メモリに１を加算して記憶する。次の５個賞球情報がくれば（５個賞球の排出前に）、賞球数５個加算メモリにさらに１を加算して２を記憶する。送信された賞球数情報が７個賞球情報である場合、賞球数情報が１３個賞球情報である場合も同様である。

【００７５】このようにして、設定賞球データ定義メモリとセットの賞球データメモリに３系統の賞球数情報を加算記憶した後、停電があってもＲＡＭ２０３がバックアップされているため、停電復帰後に、例えば図１１（ｂ）に示すような電源投入時の保持データ、すなわち、賞球数定義５個の賞球数５個加算メモリ＝７、賞球数定義７個の賞球数７個加算メモリ＝１０、賞球数定義１３個の賞球数１３個加算メモリ＝５というデータが保持されていたとすると、排出制御装置１０６では賞球数加算メモリの保持データの全体を参照し、賞球数の大きい賞球数情報を優先した優先順位とすることにより、図１１（ｃ）に示すように優先順メモリに１５個賞球の順位＝１、７個賞球の順位＝２、５個賞球の順位＝３と書き込み、この優先順メモリに書き込まれた優先順に排出ユニット１０５を駆動制御して賞球排出を行う。このようにすることで、第１の実施の形態に比べ、ＲＡＭ２０３における賞球数情報に関連するメモリ容量をさらに少なくすることができ、ＲＡＭ２０３を効率よく活用することができる。すなわち、パチンコ遊技機１における遊技盤１３の賞球数は実際上３系統（５個、７個、１３個の賞球数）が殆どであり、第１の実施の形態に比べて９領域（バイト）分メモリ容量を節約することができる。

【００７６】「第３の実施の形態の変形例」次に、図１１（ｄ）は第３の実施の形態の変形例であり、電源投入時の賞球数加算メモリの保持データの全体を参照し、各入賞球毎の入賞球数の大きいものを優先して払い出す構成である。具体的には、例えば図１１（ｂ）に示すように、賞球数加算メモリの保持データが賞球数５個加算メモリ＝７、賞球数７個加算メモリ＝１０、賞球数１３個加算メモリ＝５という状態であると、賞球数７個加算メモリの方が一番入賞球数が大きいので、これを選択し、７個賞球を優先し、次いで、入賞球数の大きい賞球数５個加算メモリを選択し、最後に入賞球数の最も小さい賞球数１５個加算メモリを選択し、順位メモリには図１１（ｄ）に示すように７個賞球の順位＝１、５個賞球の順位＝２、１３個賞球の順位＝３と書き込み、この順位に従って賞球の払い出しを行う。このような構成であると、設定賞球データ定義メモリと賞球データメモリとをセットにした上記利点に加えて、前述した図５（ｄ）の場合と同様の効果を得ることができる。

【００７７】「第４の実施の形態」第４の実施の形態は、電源投入時に未払いの賞球を全て合計し、その合計値を一気に払い出す構成にしたものである。なお、第４の実施の形態では、前記第１の実施の形態に比べて排出制御装置１０６、遊技制御装置１０７、ＲＡＭ２０３の機能は一部異なるが、説明の都合上、同じ符号で説明する。排出制御装置１０６におけるＲＡＭ２０３の賞球データメモリの構成は第１の実施の形態と同様であり、電源投入時の保持も賞球数７個加算メモリおよび賞球数１５個加算メモリに対して同様に行われるが、その後の賞球データメモリ優先処理が異なる。いま、電源投入時の保持データが図１２（ｂ）に示すように、賞球数７個加算メモリの保持データが３、賞球数１５個加算メモリの保持データが４であった場合、ＣＰＵ２０１は賞球数×保持データの演算を行い、さらに全ての未払いの賞球の合計値を算出し、その合計値を一気に払い出す処理を行う。図１２（ｃ）の例では、賞球数７個の場合の合計値は７×３＝２１個となり、賞球数１５個の場合の合計値は１５×４＝６０個となり、全ての未払いの賞球の合計値＝８１個となるので、８１個の賞球排出を一気に行うことになる。

【００７８】図１３は、第４の実施の形態における排出制御処理のプログラムを示すフローチャートであり、このプログラムではステップＳ５１の内容のみが第１の実施の形態と異なる（その他は同一番号を付す）。ステップＳ５１では、賞球データメモリ一括処理を行う。賞球データメモリ一括処理では、未払いの賞球を全て合計し、その合計値を一括して払い出すような指示を排出ユニット１０５に与えるようにしてステップＳ８に進み賞球排出処理を行う。例えば、図１２（ｃ）に示すの例の場合は、全ての未払いの賞球の合計値＝８１個となり、８１個の賞球排出が一気に行われる。この場合、遊技機１裏面側の排出制御処理１０６のケース上に設けられている残賞球数表示器１１８は、図１４に示すように現在の記憶総賞球数を表示するような構成（７セグメントタイプのＬＥＤを２つ並べて２桁を表示する構成）となり、この例では全ての未払いの賞球合計値＝３０個として表示されている。このように現在の未排出分の記憶されている総賞球数がいくつあるかを表示することで、一気に排出される未払いの賞球分を簡単に認識することができる。

【００７９】ここで、未払いの賞球合計値を一気に払い出すには、その前提として遊技球の排出を行える準備ができているかどうか、すなわち遊技球（遊技価値）の供給条件が成立しているかどうかの確認が必要であり、これは排出開始条件の成立（半端センサ２２４に球があり、下皿３２がオーバーフローではなく、賞球排出用の第１排出センサ２２２に球があるとき）で確認可能である。したがって、遊技球の排出を行える準備ができていれば、未払いの賞球合計値を一気に払い出すようにしてもよいが、単純にそのようにすると、遊技機１裏面側の賞球用通路（予備球流路）にて球がすぐに不足してしまうことになり、排出開始条件が把握しにくくなってしまう。そこで、払い出しの限度として、遊技機１裏面側の

賞球用通路（予備球流路）に配置される半端センサ２２４を所定球数の位置（例えば、１００個以上排出できる位置）に設けて、この球数を遊技機１が一括して払い出しできる１回の供給量の最大として保証できるようにしている。

【００８０】このように第４の実施の形態では、停電復帰後に、未払い出しの賞球の総数が一括して払い出されるので、すぐに遊技者が望む一定以上の球数が上皿３１に排出される可能性があり、遊技をすぐに再開しやすいという効果がある。また、未払い出しの賞球が一括して排出されるので、全ての遊技機１が使用再開されるのも早くなり、遊技店の売上減少を最小限に抑制可能となる。半端センサ２２４によって保証される球数を一括して払い出す場合の１回の供給量の最大としているので、１回の供給量が遊技機１で保証された球数となり、球の払い出しを正確に行うことができるとともに、排出途中で球不足になることもない。したがって、遊技機１の故障等を防止することができるとともに、遊技者から店員が球が出ないといった呼び出しを受けることが減少する。

【００８１】本発明の実施の形態は、上記のような実施の形態に限らず、以下に述べるような各種の変形実施が可能である。

（ａ）本発明は実施の形態のような例のパチンコ遊技機に限らず、他の遊技機であってもよいこともいうまでもない。例えば、他の機種タイプのパチンコ機、アレンジボール機、雀球遊技機、スロットマシン等にも適用することができる。また、本発明はパチンコ遊技機でなく、例えば映像式ゲーム機のようなものにも適用できる。

【００８２】

【発明の効果】請求項１記載の発明によれば、以下の効果を得ることができる。セーフユニットを設けずに高速な賞球排出処理を実現しつつ、記憶手段（例えば、ＲＡＭ２０３）に賞球数を記憶している状態で遊技機の電源が遮断されても、賞球数情報が一切消去されることなく保持することができ、例えば特別遊技状態（例えば、大当たり）中の大量の賞球数記憶といった場合であっても、すべての賞球を確実に払い出しすることができる。したがって、遊技者に損害を与えることがなくなり不平不満を未然に防げ、よって遊技店と遊技者とのトラブルを防ぐことが可能となる。特に、停電復帰時、賞球数の少ない遊技球の排出が連続したり、あるいは賞球数の少ない賞球排出の遊技球が先に排出されてしまって上皿に球が溜まるのに時間がかかるという欠点を解消することができる。したがって、遊技者がすぐに遊技を行えるので、停電時などで売り上げが一時的に落ちてしまっても、停電復旧後における遊技店での売り上げを向上させることができる。また、停電復帰時に、遊技機に保持された賞球数情報に基づいて賞球の払い出しを行う際に、従来と異なり、賞球の払い出しペースが遅いとか、一定量の球がすぐに確保できないという状態を解消することができ、遊技者に不満感を与えることがなくなるとともに、賞球の払い出しも遅れないので、遊技が中断される事態もなくなる。

【００８３】さらに、例えば停電復帰時に、直ちに遊技を続行したいという遊技者に対して、球がすぐになくなるという状態が解消されるので、遊技が断続的になってしまうということがない。また、未払い出しの賞球の早期排出を望むという遊技者の要求に応えることができる。未払い出し賞球の状況を把握してから遊技を行いたいという遊技者は未払い出しの賞球が一定以上にならないと、遊技を始めたくないが、本発明では、すぐに効率よく賞球の払い出しが行われるので、未払い出し賞球の状況を把握する時間を短くすることができる。特に、停電からの復旧時に大勢の遊技者が上述したような要求を行っても、これに応えることができる。また、停電復帰時に、全ての遊技機での遊技者の遊技再開が遅れないので、遊技店の売り上げが極端に減少することを回避できる。なお、停電復帰時に限らず、例えば開店中に点検、整備の必要があって、遊技機の電源を一時的にオフしてから復旧するような場合も上記同様の効果がある。電源投入時（例えば、停電復帰時）に、賞球数情報全体を参照して優先した賞球の払い出しが行われるので、記憶されている未払い出しの球に対して遊技者が望む一定量以上の払い出しをすぐに行うことができる。したがって、遊技者が電源投入時にすぐに遊技を行っても、遊技が中断されにくいという効果がある。

【００８４】請求項２記載の発明によれば、停電復帰後に、未払い出しの賞球の総数が一括して払い出されるので、すぐに遊技者が望む一定の球数が上皿に排出される可能性があり、遊技をすぐに再開しやすいという効果がある。また、未払い出しの賞球が一括して排出されるので、全ての遊技機が使用再開されるのも早くなり、遊技店の売上減少を最小限に抑制可能となる。

【００８５】請求項３記載の発明によれば、記憶手段（例えば、ＲＡＭ２０３）に対してバックアップ電源を供給可能なバックアップ電源手段を排出制御装置の外部に設けることにより、通常のＲＡＭを使用して記憶内容をバックアップすることができ、例えばＥＥＰＲＯＭのような特別な電子部品を用いる必要がない。したがって、コスト低減が可能であり、またＥＥＰＲＯＭのように書き込み限度数を気にする必要がないという効果がある。

【００８６】請求項４記載の発明によれば、電源装置（例えば、電源供給ユニット１１１）を排出制御装置の外部に設け、そのうえ、排出制御装置の記憶手段をバックアップさせる機能を電源装置に設けたので、排出制御装置の回路を小型化することができる。したがって、遊技機の裏面空間のスペースを大きくとらずに済み、遊技機１裏面をすっきりとした視認性の良いものとすること

ができるとともに、不正の抑止も可能になる。

【００８７】請求項５記載の発明によれば、複数賞球数が未払い出いの賞球として残っている場合、賞球数の大きいものを優先して払い出すことにより、少ない賞球払い出しを後回しにでき、遊技者が望む一定量以上の払い出しをすぐに行うことができる。

【００８８】請求項６記載の発明によれば、各賞球数毎の入賞球数の大きい賞球数情報を優先して賞球排出することにより、以下の効果がある。

①何れかの未払い出しの賞球（例えば、１５個賞球）のみが突出して記憶されることがなくなり、賞球数情報記憶領域（例えば、賞球データメモリエリア）における各遊技価値データ記憶要素（例えば、賞球数加算メモリ）の記憶量がすぐに均一化する。

②入賞球数の多い賞球数を先に排出処理するので、賞球数情報記憶領域に記憶される遊技価値データ記憶要素（例えば、賞球数加算メモリ）の保持データがメモリオーバになるのを防止することができる。

③遊技者は、連続排出される球でどの賞球が多く賞球数情報記憶領域に記憶されたのかが明確にわかる。例えば、球の排出音がどの程度続くかで、その賞球がわかり、例えば７個賞球なのかあるいは１５個賞球なのかを区別できる。

④例えば、大当りの最中に、停電になって大入賞口（例えば、変動入賞装置４５）への入賞記憶（例えば、賞球数１５個加算メモリの記憶）が極端に多くなっていても、停電復帰後にすぐに一番入賞数の多い大入賞口への入賞記憶から優先して払い出すことができ、停電前に一番入賞していた入賞口に対する賞球が最初に出てくる。したがって、遊技者が最も印象に残っていた賞球排出を行うことができ、遊技者が抱きかねない入賞口に入賞した球に対する賞球がきちんと行われているかどうかという疑いをもたれるのを未然に防ぎ、遊技者に猜疑心を与えるのを防止できる。

【００８９】請求項７記載の発明によれば、遊技制御装置から送信された賞球数情報を当該賞球数情報に対応した遊技価値データ記憶要素（例えば、賞球数加算メモリ）に順次加算記憶する構成とすることにより、未払い分の賞球払い出しのときに、遊技価値データ記憶要素に保持されている加算記憶の全体を比較して優先排出の処理を行おうとする場合に、単に各賞球数情報の加算記憶値を比較判断するだけで優先順位の決定ができ、未払い分の賞球排出処理がしやすく、プログラムも簡単で済む。

【００９０】請求項８記載の発明によれば、予備球センサ（例えば、半端センサ２２４）によって保証される遊技球数を一括して払い出す遊技価値の１回の供給量の最大とすることにより、１回の供給量が遊技機で保証された球数となり、球の払い出しを正確に行うことができるとともに、排出途中で球不足になることもない。したがって、遊技機の故障等を防止することができるとともに、遊技者から店員が球が出ないといった呼び出しを受けることが減少する。

【００９１】請求項９記載の発明によれば、報知手段（例えば、残賞球有無表示器５９、残賞球数表示器１１８、残賞球報知信号出力端子１１９）を設けて未払い賞球があることの報知や、未払い賞球賞球をしていることの報知を行うことにより、遊技者あるいは店員に未払い賞球の処理をどのようにして行っているかを明確に認識させることができる。特に、未払い出しの賞球排出を行っていることが遊技店側にわかることで、遊技店側では遊技機から通常の排出よりも多くの排出があっても、不正排出との区別ができる。また、遊技者側では、何の排出であるかを容易に把握することができ、無用なトラブルを防止することができる。すなわち、未払い出し分の賞球数がいくつあるかが判断できるので、遊技者と遊技店との間のトラブル発生を回避できる。

【図面の簡単な説明】

【図１】本発明の一実施の形態である遊技機の正面図である。

【図２】遊技機の裏面図である。

【図３】遊技機の電源供給系統を示す図である。

【図４】遊技機の制御系統を示す図である。

【図５】ＲＡＭの賞球データメモリを説明する図である。

【図６】排出制御装置のプログラムを示すフローチャートである。

【図７】賞球排出処理のサブルーチンを示すフローチャートである。

【図８】停電処理のプログラムを示すフローチャートである。

【図９】残賞球数表示器を説明する図である。

【図１０】排出制御装置のプログラムを示すフローチャートである。

【図１１】ＲＡＭの賞球データメモリの他の例を説明する図である。

【図１２】ＲＡＭの賞球データメモリの他の例を説明する図である。

【図１３】排出制御装置のプログラムを示すフローチャートである。

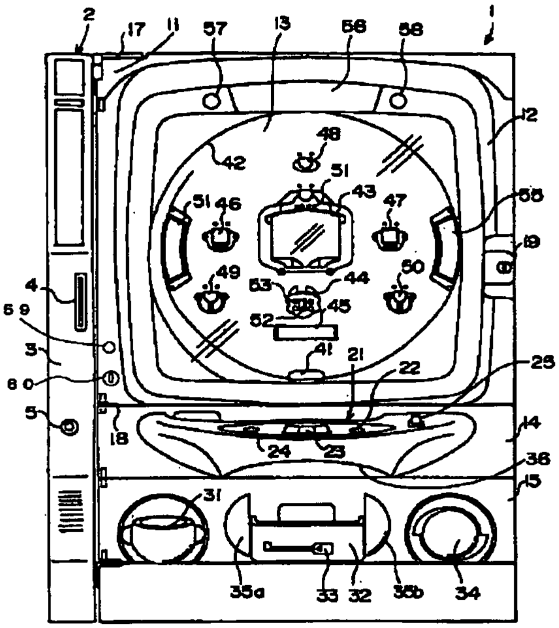
【図１４】残賞球数表示器の他の例を説明する図である。

【符号の説明】

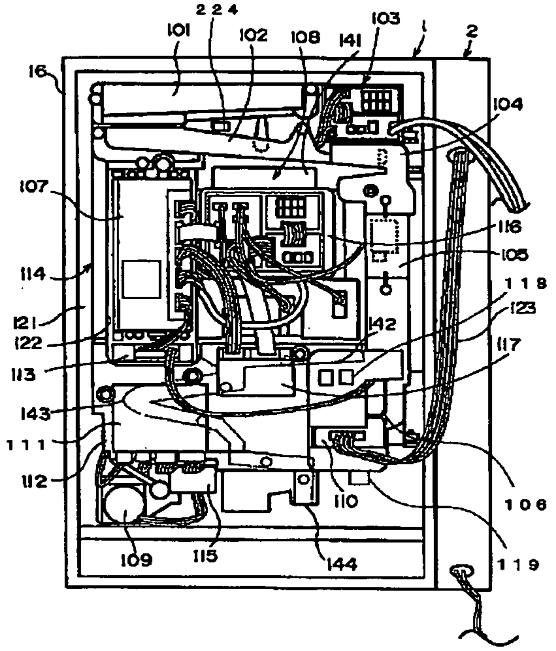
１	遊技機
５９	残賞球有無表示器（報知手段）
１０６	排出制御装置
１０７	遊技制御装置
１１１	電源供給ユニット（電源装置）
１１８	残賞球数表示器（報知手段）
１１９	残賞球報知信号出力端子（報知手段）

２０１　ＣＰＵ（情報記憶処理手段、優先順位決定手段、遊技価値供給処理手段）
２０３　ＲＡＭ（記憶手段）
＊２１２　コンデンサ（バックアップ手段、バックアップ電源手段）
＊　２２４　半端センサ（予備球センサ）

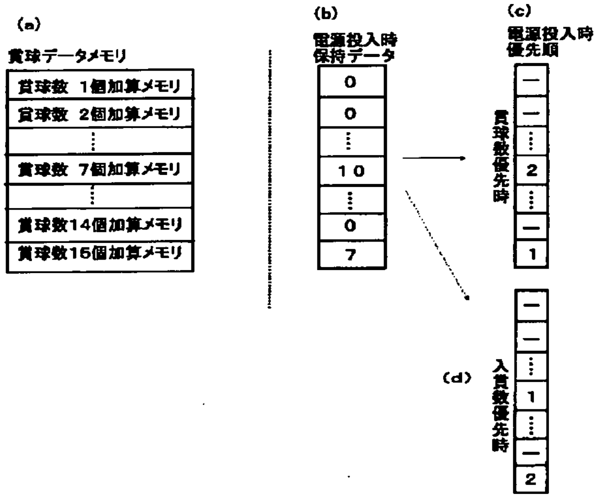
【図１】


2
17
11
57
13
56
58
1
12
48
42
51
43
47
55
51
46
19
49
53
44
50
4
45
52
59
3
41
21
22
60
25
5
18
24
23
14
36
15
31
35a
33
32
35b
34

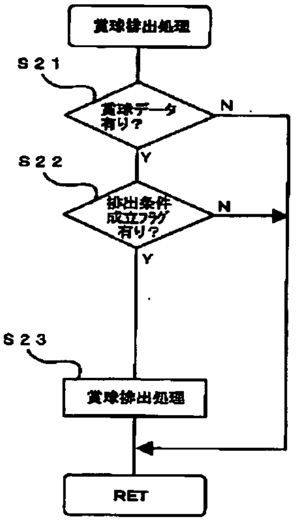
【図２】


224
103
101
102
108
141
1
2
16
104
107
116
105
114
118
123
121
142
122
117
113
143
111
112
110
106
109
115
144
119

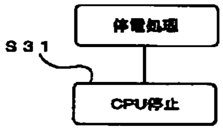
【図５】


(a)
賞球データメモリ
賞球数　1個加算メモリ
賞球数　2個加算メモリ
賞球数　7個加算メモリ
賞球数14個加算メモリ
賞球数15個加算メモリ
(b)
電源投入時
保持データ
0
0
10
0
7
(c)
電源投入時
優先順
賞球数優先時
—
—
2
—
1
(d)
入賞数優先時
—
—
1
—
2

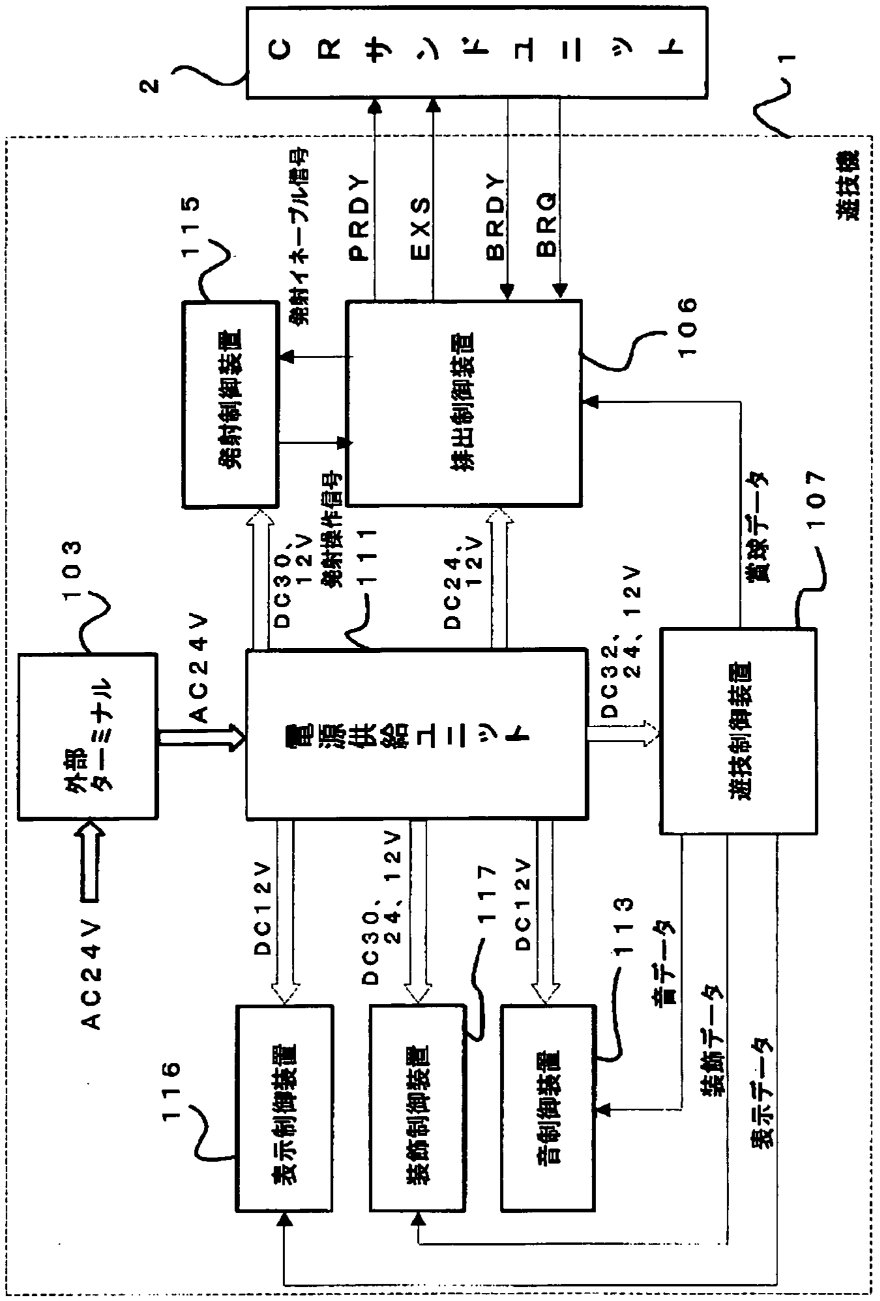
【図７】


賞球排出処理
S21
賞球データ有り？
N
Y
S22
排出条件成立フラグ有り？
N
Y
S23
賞球排出処理
RET

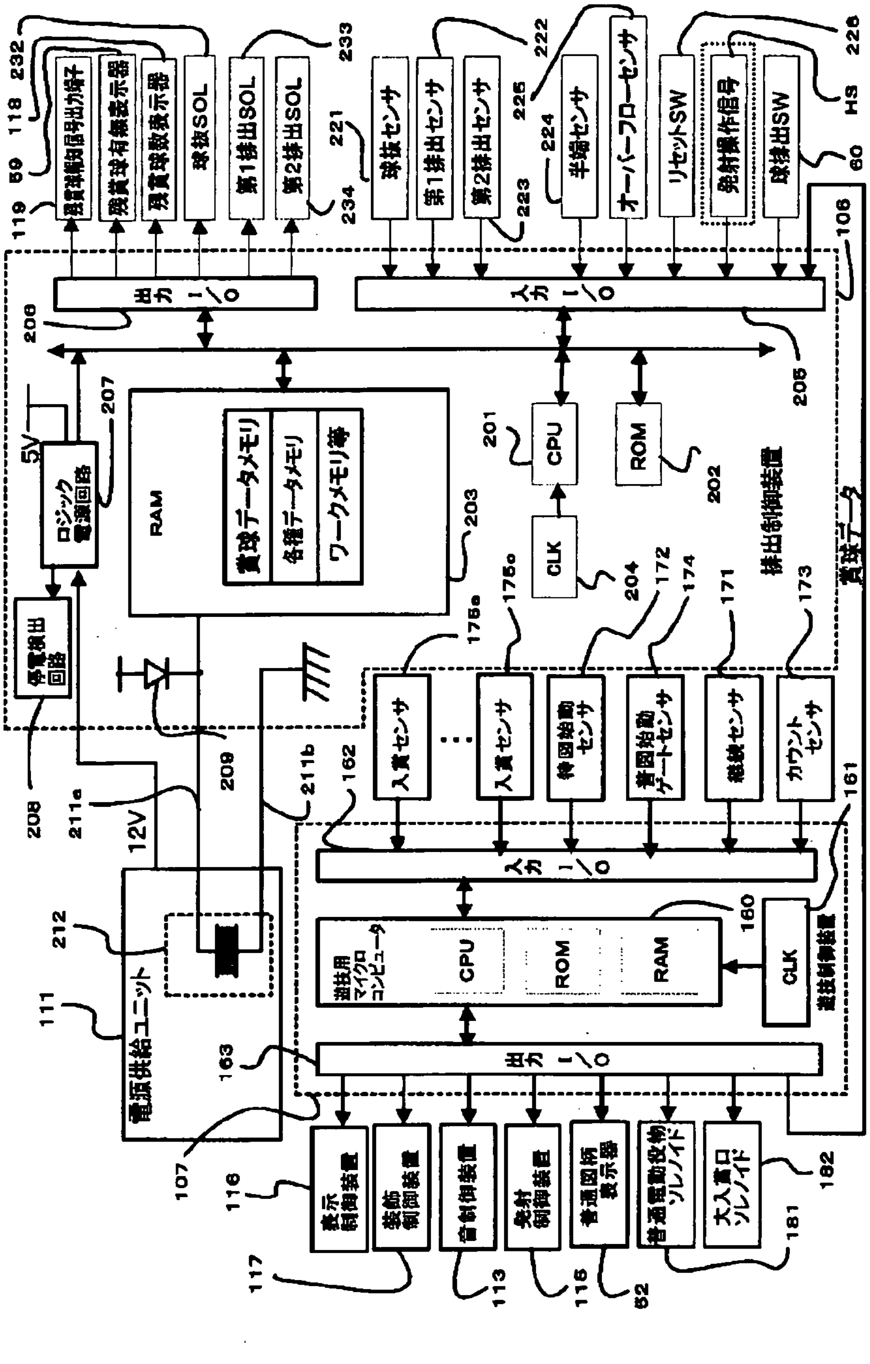
【図８】


停電処理
S31
CPU停止

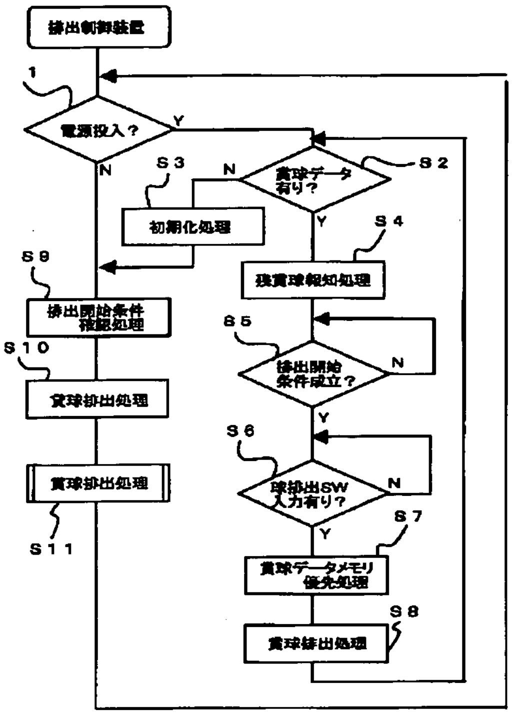
【図３】


ＣＲサンドユニット
2
1
遊技機
ＰＲＤＹ
ＥＸＳ
ＢＲＤＹ
ＢＲＱ
発射イネーブル信号
115
発射制御装置
排出制御装置
106
発射操作信号
ＤＣ３０、１２Ｖ
111
ＤＣ２４、１２Ｖ
賞球データ
107
103
外部ターミナル
ＡＣ２４Ｖ
電源供給ユニット
ＤＣ３２、２４、１２Ｖ
遊技制御装置
ＡＣ２４Ｖ
ＤＣ１２Ｖ
ＤＣ３０、２４、１２Ｖ
117
ＤＣ１２Ｖ
113
音データ
装飾データ
表示データ
116
表示制御装置
装飾制御装置
音制御装置

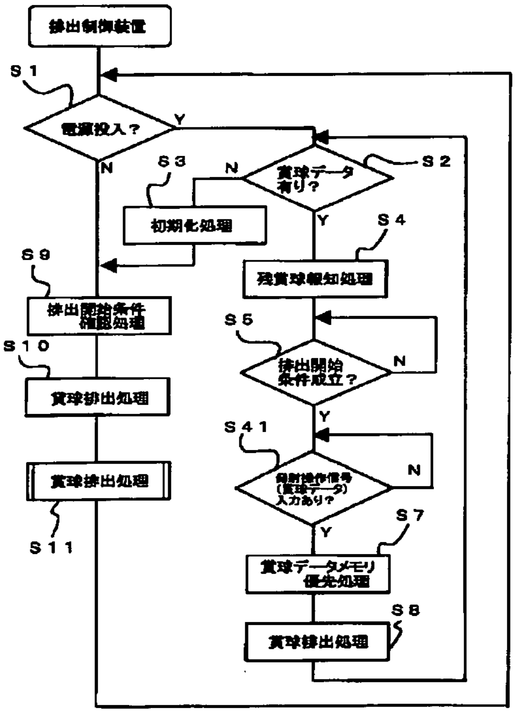
【図４】


賞球制御信号出力端子
賞球有無表示器
賞球数表示器
球抜SOL
第1排出SOL
第2排出SOL
球抜センサ
第1排出センサ
第2排出センサ
半端センサ
オーバーフローセンサ
リセットSW
発射操作信号
球排出SW
119
59
118
232
233
234
221
223
224
225
222
226
HS
60
106
出力I/O
入力I/O
206
205
207
5V
ロジック電源回路
停電検出回路
208
RAM
賞球データメモリ
各種データメモリ
ワークメモリ等
203
CPU
201
ROM
202
CLK
204
排出制御装置
賞球データ
175a
175c
172
174
171
173
入賞センサ
特図始動センサ
普図始動ゲートセンサ
継続センサ
カウントセンサ
209
211a
211b
12V
162
161
212
電源供給ユニット
111
入力I/O
遊技用マイクロコンピュータ
CPU
ROM
RAM
160
CLK
遊技制御装置
163
出力I/O
107
表示制御装置
装飾制御装置
音制御装置
発射制御装置
普通図柄表示器
普通電動役物ソレノイド
大入賞口ソレノイド
116
117
113
115
52
181
182

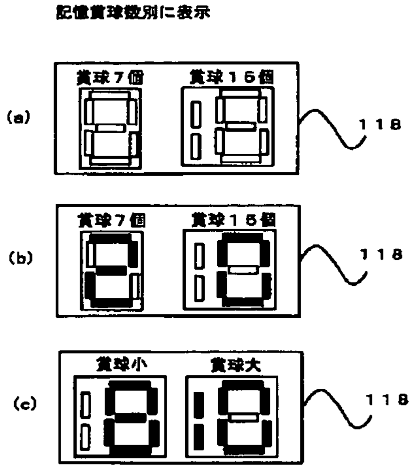
【図６】


排出制御装置
1
電源投入？
Y
N
S 2
賞球データ有り？
N
S 3
初期化処理
Y
S 4
残賞球報知処理
S 9
排出開始条件確認処理
S 5
排出開始条件成立？
N
S 1 0
賞球排出処理
Y
S 6
球排出SW入力有り？
N
賞球排出処理
Y
S 7
S 1 1
賞球データメモリ優先処理
S 8
賞球排出処理

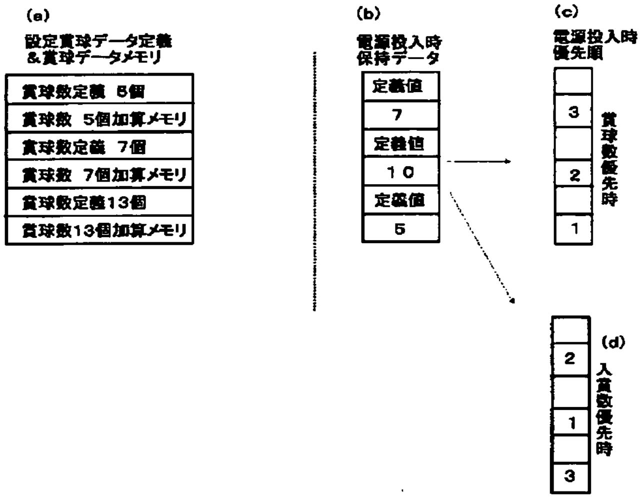
【図１０】


排出制御装置
S 1
電源投入？
Y
N
S 2
賞球データ有り？
N
S 3
初期化処理
Y
S 4
残賞球報知処理
S 9
排出開始条件確認処理
S 5
排出開始条件成立？
N
S 1 0
賞球排出処理
Y
S 4 1
発射操作信号（賞球データ）入力あり？
N
賞球排出処理
Y
S 7
S 1 1
賞球データメモリ優先処理
S 8
賞球排出処理

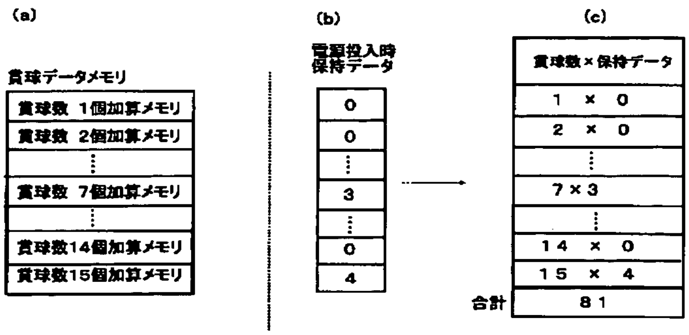
【図９】


記憶賞球数別に表示
(a)
賞球７個
賞球１５個
１１８
(b)
賞球７個
賞球１５個
１１８
(c)
賞球小
賞球大
１１８

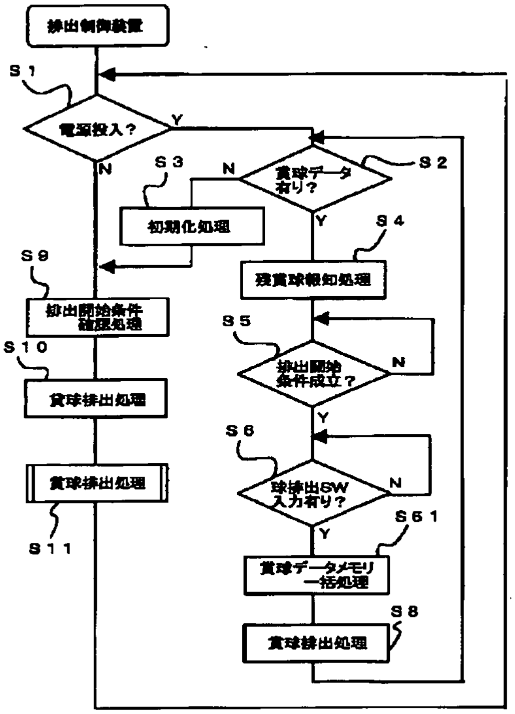
【図１１】


(a)
設定賞球データ定義＆賞球データメモリ
賞球数定義 5個
賞球数 5個加算メモリ
賞球数定義 7個
賞球数 7個加算メモリ
賞球数定義13個
賞球数13個加算メモリ
(b)
電源投入時保持データ
定義値
７
定義値
１０
定義値
５
(c)
電源投入時優先順
３
２
１
賞球数優先時
(d)
２
１
３
入賞数優先時

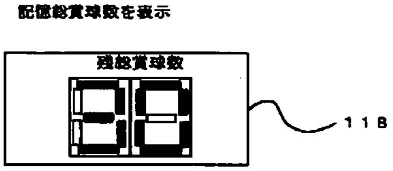
【図１２】


(a)
賞球データメモリ
賞球数 1個加算メモリ
賞球数 2個加算メモリ
⋮
賞球数 7個加算メモリ
⋮
賞球数14個加算メモリ
賞球数15個加算メモリ
(b)
電源投入時保持データ
０
０
⋮
３
⋮
０
４
(c)
賞球数×保持データ
１ × ０
２ × ０
⋮
７×３
⋮
１４ × ０
１５ × ４
合計
８１

【図１３】


排出制御装置
S1
電源投入？
Y
N
S2
賞球データ有り？
N
Y
S3
初期化処理
S4
残賞球報知処理
S9
排出開始条件確認処理
S5
排出開始条件成立？
N
Y
S10
賞球排出処理
S6
球排出SW入力有り？
N
Y
賞球排出処理
S11
S61
賞球データメモリ一括処理
S8
賞球排出処理

【図１４】


記憶総賞球数を表示
残総賞球数
118

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Bibliography

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A63F 7/02 324
334
[FI]
A63F 7/02 324 E
334
[Request for Examination] Un-asking.
[The number of claims] 9
[Mode of Application] OL
[Number of Pages] 23
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(22) [Filing Date] March 12, Heisei 11 (1999. 3.12)
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[Theme code (reference)]
2C088
[F term (reference)]

2C088 BA30 BC58 CA06 CA31

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Summary

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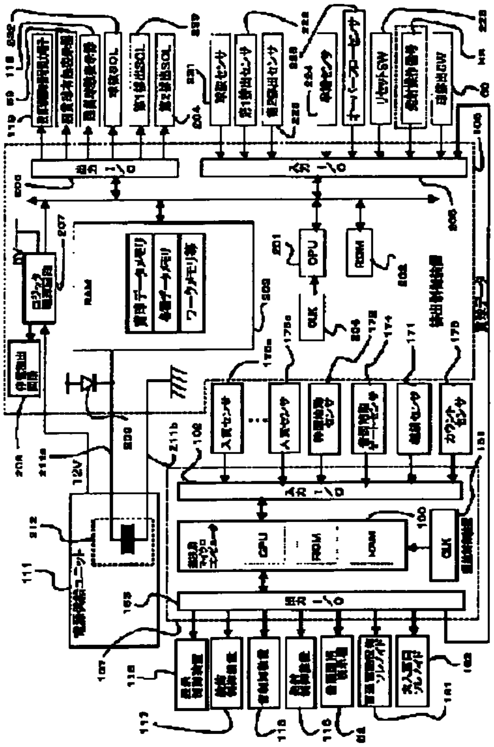
(57) [Abstract] (******)
[Technical problem] The game machine which can hold the number information of awarded balls, and can pay out awarded balls promptly at the time of power failure restoration etc. is offered realizing high-speed awarded-balls eccrisis processing.
[Means for Solution] The addition storage of the number information of awarded balls transmitted from the game control unit 107 is carried out one by one at the number addition memory of awarded balls of RAM203, and the content of storage of the number information of awarded balls in RAM203 is held. When it backs up and the number information of awarded balls is held at the power up (at the time [Especially] of a power fail recovery) of the game machine 1 at the number addition memory of awarded balls of RAM203, with reference to the whole number information of awarded balls currently held, the priority of arrears awarded-balls supply is determined from the reference result, and awarded-balls eccrisis is performed.

[Translation done.]



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CLAIMS

[Claim(s)]

[Claim 1] In the game machine characterized by providing the following the aforementioned emission-control equipment A storage means by which information is memorizable, and an information-memory-processing means to make the predetermined number information-storage field of awarded balls of the aforementioned storage means memorize the number information of awarded balls transmitted from the aforementioned game control unit, A backup means to back up

so that the contents of storage of the aforementioned number information of awarded balls in the aforementioned storage means may be held, A priority determination means to determine the priority of game value supply as the power up of a game machine from the reference result with reference to the whole number information of awarded balls currently held when the number information of awarded balls is held to the predetermined number information-storage field of awarded balls of the aforementioned storage means, The game value supply processing means of ****** and the aforementioned emission-control equipment is a game machine characterized by supplying game value by the predetermined priority determined by the aforementioned priority determination means. The game control unit which transmits the number information of awarded balls for supplying the game value generated in the game to a game person while controlling advance of the game in the game face of a board Emission-control equipment which has a game value supply processing means to supply game value to a game person based on the number information of awarded balls transmitted from the game control unit
[Claim 2] In the game machine characterized by providing the following the aforementioned emission-control equipment A storage means by which information is memorizable, and an information-memory-processing means to make the predetermined number information-storage field of awarded balls of the aforementioned storage means memorize the number information of awarded balls transmitted from the aforementioned game control unit, It has a backup means to back up so that the contents of storage of the aforementioned number information of awarded balls in the aforementioned storage means may be held. the game value supply processing means of the aforementioned emission-control equipment The game machine characterized by supplying collectively the game value which totaled the whole number information of awarded balls currently held, and was totaled to the power up of a game machine when the number information of awarded balls is held to the predetermined number information-storage field of awarded balls of the aforementioned storage means The game control unit which transmits the number information of awarded balls for supplying the game value generated in the game to a game person while controlling advance of the game in the game face of a board Emission-control equipment which has a game value supply processing means to supply game value to a game person based on the number information of awarded balls transmitted from the game control unit
[Claim 3] It is the game machine according to claim 1 or 2 which the aforementioned game control unit and emission-control equipment consider the power supply for using it within these equipments as the composition supplied from the power unit constituted separately, and the aforementioned backup means consists of backup power supply meanses which can supply a backup power supply to the aforementioned storage means, and is characterized by to prepare this backup power supply means in the exterior of the aforementioned emission-control equipment.

[Claim 4] The aforementioned game control unit and emission-control equipment consider the power supply for using it within these equipments as the composition supplied from the power unit constituted separately. the aforementioned power unit It is what generates a necessary power supply and is supplied to the aforementioned emission-control equipment in response to the power supply supplied from the outside of a game machine. the aforementioned backup means When the current supply from a power unit to emission-control equipment is cut off by cutting off the current supply from the game opportunity outside It is the game machine according to claim 1 or 2 characterized by being the element which supplies a backup power supply to a storage means as the contents of storage of the aforementioned storage means are held, and preparing the backup means in the aforementioned power unit.
[Claim 5] The aforementioned priority determination means is a game machine given in the claims 1 and 3 or any of 4 they are. [which is characterized by considering as the priority which gave the difference of game value supply by the size of the number of awarded balls among the number information of awarded balls currently held to the predetermined number information-storage field of awarded balls of the aforementioned storage means, and gave priority to the number information of awarded balls that the number of awarded balls is large]
[Claim 6] The aforementioned priority determination means is a game machine given in the claims 1 and 3 or any of 4 they are. [which is characterized by considering as the priority which gave the difference of game value supply by the size of the number of winning-a-prize spheres for every number of awarded balls among the number information of awarded balls currently held to the predetermined number information-storage field of awarded balls of the aforementioned storage means, and gave priority to the number information of awarded balls that the number of winning-a-prize spheres is large]
[Claim 7] In the aforementioned number information-storage field of awarded balls of the aforementioned storage means Corresponding to each number information of awarded balls from the number information of the minimum awarded balls decided with the game machine to the number information of the maximum awarded balls, the number information data-storage element of awarded balls is formed. the aforementioned information-memory-processing means The addition storage of the transmitted number information of awarded balls is carried out at the aforementioned number information data-storage element of awarded balls corresponding to the number information of awarded balls concerned. It is the composition that the aforementioned game value supply processing means supplies game value to a game person based on this addition storage. the aforementioned backup means A game machine given in the claim 1 or any of 6 they are. [which is characterized by being what backs up so that the number information data-storage element of awarded balls corresponding to the number information of awarded balls and this numb r information of awarded balls may be held]
[Claim 8] As one of the conditions of supply of game value, it is the game machine

according to claim 2 which the reserve sphere sensor is arranged in the predetermined position of the reserve sphere passage by the side of a game machine rear face, and is characterized by making the game value supply processing means of the aforementioned emission-control equipment into the maximum of 1 time of the amount of supply of the game value which supplies collectively the number of game spheres guaranteed by the aforementioned reserve sphere sensor.
[Claim 9] A game machine given in the claim 1 or any of 8 they are. [which is characterized by having an information means to report supplying game value based on the number information of awarded balls currently held when the number information of awarded balls is held at the power up of a game machine to the predetermined number information-storage field of awarded balls of the aforementioned storage means]

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] A game control unit and emission-control equipment are constituted separately, and this invention relates to the game machine (for example, pachinko game machine) with which emission-control equipment supplies game value to a game person based on the number information of awarded balls as game value information transmitted from the game control unit.
[0002]
[Description of the Prior Art] The conventional pachinko game machine is that the emission-control equipment constituted separately (meaning that the substrate is constituted independently) carries out drive control of the exhaust (for example, discharge unit) based on the number information of awarded balls transmitted from the game control unit which controls advance of the game in the game face of a board, and supplied game value (for example, game sphere as awarded-balls

discharge) to the game person. Namely, a game sphere is discharged to the game field formed in the game face of a board, and it is contingent [on having won a prize of the various winning-a-prize mouths with which this discharge sphere was prepared in the game field]. That game value should be supplied to a game person, the number information of awarded balls (for example, data called seven-piece awarded balls and 13-piece awarded balls) is transmitted to emission-control equipment, and the game sphere of the predetermined number as game value is supplied to the game person with emission-control equipment.

[0003] For details, in order to raise game nature, change the number of awarded balls with the winning-a-prize mouth prepared in the game field. (for example, the number of winning a prize which won a prize of 13-piece awarded-balls) and these winning-a-prize mouth to winning a prize to seven-piece awarded balls and other winning-a-prize mouths to winning a prize to a starting winning-a-prize mouth, is memorized (for example, when the number of awarded balls is two kinds, both are distinguished by memorizing one side and not memorizing another side). And the game sphere (winning-a-prize sphere) which won a prize is gathered by the safe unit which ****** this one winning-a-prize sphere, the stay mechanism established in the safe unit stays a winning-a-prize sphere temporarily, and the winning-a-prize sphere in this state is ******(ed) by one safe sensor.

[0004] And in a game control unit, when the number information of awarded balls (for example, seven pieces) that it corresponds when winning-a-prize sphere storage is checked and there is winning-a-prize sphere storage based on the winning-a-prize sphere signal from a safe sensor is transmitted to emission-control equipment and there is no winning-a-prize storage, the set-up number information of awarded balls (for example, 13 pieces) is transmitted. Subsequently, while emission-control equipment supplies a game sphere to a game person based on the transmitted number information of awarded balls (it supplies by driving for example, an eccrisis unit), the winning-a-prize sphere which was made to drive the stay mechanism of a safe unit and was concerned with the awarded-balls eccrisis concerned is discharged to game outside the plane, and the awarded-balls eccrisis processing based on a winning-a-prize sphere ends it. Under the present circumstances, in the game control unit, the timing which subtracts the winning-a-prize sphere storage which transmitted to emission-control equipment serves as a time of awarded-balls eccrisis processing being completed, when transmission to emission-control equipment is completed and awarded-balls eccrisis processing is started. Although the number information of awarded balls of the above is two examples (for example, 7 awarded balls and 13 awarded balls), two or more awarded balls like three lines (for example, five-piece awarded balls, 7 awarded balls, and 13 awarded balls) may be set up besides this. make it any -- with the game control unit, when a prize of a winning-a-prize mouth is won, the number of awarded balls corresponding to the winning-a-prize mouth is transmitted to emission-control equipment, and awarded balls are discharged with emission-control equipment in order of the number data of awarded balls transmitted from the game control unit

[0005] Moreover, without preparing the above-mentioned safe unit, in order to make awarded-balls eccrisis high-speed Namely, the method of transmitting the number information of awarded balls to emission-control equipment from a game control unit based on having ******(ed) in one safe unit is replaced. For example, while transmitting the number information of awarded balls to emission-control equipment one by one based on having formed the sensor for each [which was prepared in the game face of a board] winning-a-prize mouth of every, and the game sphere having won a prize of these sensors Control discharged to game outside the plane, without staying like the above the game sphere which won a prize temporarily is performed. On the other hand, emission-control equipment memorizes the transmitted number information of awarded balls one by one, and has the proposal of the pachinko game machine which drives an eccrisis unit with emission-control equipment based on this memorized number information of awarded balls, and discharges awarded balls.

[0006]

[Problem(s) to be Solved by the Invention] By the way, if it was in the above-mentioned conventional pachinko game machine, there were the following troubles. When the power supply (supplied by AC24V from the exterior (for example, island facility) of a game machine) supplied to a game machine intercepted (**), however the above-mentioned pachinko game machine (power failure), the number information of awarded balls (for example, awarded-balls data of seven pieces and 13 pieces) memorized by a game control unit or emission-control equipment was eliminated. In being the pachinko game machine with which the above-mentioned safe unit was prepared at this time Since the upstream stays the game sphere which won a prize from the stay equipment of a safe unit Although awarded balls could be performed based on the game sphere (winning-a-prize sphere), as a result of eliminating the number storage of awarded balls, the winning-a-prize sphere which it stays had altogether the trouble of doing damage to a game person or a game store, instead of the specific number of awarded balls (for example, all will become 13-piece awarded balls). When all are 13-piece awarded balls, a game store suffers damage.

(b) According to the pachinko game machine which the type which does not prepare a safe unit on the other hand described above and which is proposed, since it will be discharged by game outside the plane, without staying temporarily, the winning-a-prize sphere which won a prize of a winning-a-prize mouth will inflict damage on a game person, if the number information of awarded balls which emission-control equipment memorized one by one is eliminated, and a trouble will generate it between game stores. By the way, demand of making awarded-balls eccrisis high-speed, without preparing a safe unit in this way is also the place desired recently.

[0007] (c) Although it is possible to prepare the function to hold the number information of awarded balls memorized in order to solve such a problem, when it becomes impossible especially to have used the game machine by the power failure

etc. as it is only the composition which prepared the function to only hold storage and restores from a power failure after that, there are the following troubles.
** If the function to only hold storage of the number information of awarded balls was only prepared, to the power up at the time of restoring from the power failure after a power failure etc. In case the number information of awarded balls held at the game machine exists and expenditure of awarded balls is performed, eccrisis of a game sphere with few awarded balls will continue, or the game sphere of the awarded-balls eccrisis with few awarded balls will be discharged previously, and there is a fault that that an upper pan is covered with a sphere takes time. Therefore, when there are many game persons who do not perform a game immediately, free is added to sales having fallen off temporarily in the time of a power failure etc., and has the trouble that the sales in the game store after power failure restoration cannot improve easily.
** A dissatisfied feeling may be given to a game person in the game machine which the sphere of the case where the expenditure pace of awarded balls is late, and a constant rate cannot secure immediately in case the number information of the awarded balls held at the power up at the time of use of a game machine becoming impossible at a power failure etc., and restoring from after that and a power failure at the game machine exists and expenditure of awarded balls is performed. Moreover, if expenditure of awarded balls is overdue, the situation where a game is interrupted will also be produced.
[0008] ** For example, since the game person who wants to perform a game after the game person who wants to continue a game immediately after power failure restoration desires early discharge of non-paid out awarded balls and grasps the situation of non-paid out awarded balls since a sphere is lost immediately, and a game becomes intermittent does not want to begin a game unless non-paid out awarded balls become more than fixed, a lot of awarded-balls expenditure will be desired immediately. Especially, at the time of the restoration from a power failure, since a demand which large number of people's game person mentioned above is performed, to solve this is desired.
** If game resumption of the game person in all game machines is overdue at the time of power failure restoration, since it will be expected as a game store that sales decrease extremely, a game machine in which prompt game resumption is possible is desired. Although it is mainly at the power failure restoration time, the above-mentioned examples need to be check and maintenance, and after they turn off the power supply of a game machine temporarily, when restoring, there is same problem, for example during opening.
[0009] Then, it aims at offering the game machine which can hold the number information of awarded balls, and can pay out awarded balls promptly at the time of power failure restoration etc., this invention having been made in view of the above-mentioned trouble, and realizing high-speed awarded-balls discharge processing.
[0010]

[Means for Solving the Problem] The game machine by invention according to claim 1 for the above-mentioned purpose achievement The game control unit which transmits the number information of awarded balls for supplying the game value generated in the game to a game person while controlling advance of the game in the game face of a board, In the game machine equipped with the emission-control equipment which has a game value supply processing means to supply game value to a game person based on the number information of awarded balls transmitted from the game control unit the aforementioned emission-control equipment A storage means by which information is memorizable, and an information-memory-processing means to make the predetermined number information-storage field of awarded balls of the aforementioned storage means memorize the number information of awarded balls transmitted from the aforementioned game control unit, A backup means to back up so that the content of storage of the aforementioned number information of awarded balls in the aforementioned storage means may be held, A priority determination means to determine the priority of game value supply as the power up of a game machine from the reference result with reference to the whole number information of awarded balls currently held when the number information of awarded balls is held to the predetermined number information-storage field of awarded balls of the aforementioned storage means, The game value supply processing means of ****** and the aforementioned emission-control equipment is characterized by supplying game value by the predetermined priority determined by the aforementioned priority determination means.

[0011] While the game machine by invention according to claim 2 controls advance of the game in the game face of a board The game control unit which transmits the number information of awarded balls for supplying the game value generated in the game to a game person, In the game machine equipped with the emission-control equipment which has a game value supply processing means to supply game value to a game person based on the number information of awarded balls transmitted from the game control unit the aforementioned emission-control equipment A storage means by which information is memorizable, and an information-memory-processing means to make the predetermined number information-storage field of awarded balls of the aforementioned storage means memorize the number information of awarded balls transmitted from the aforementioned game control unit, It has a backup means to back up so that the content of storage of the aforementioned number information of awarded balls in the aforementioned storage means may be held. the game value supply processing means of the aforementioned emission-control equipment It is characterized by supplying collectively the game value which totaled the whole number information of awarded balls currently held, and was totaled to the power up of a game machine, when the number information of awarded balls is held to the predetermined number information-storage field of awarded balls of the aforementioned storage means.

[0012] Invention according to claim 3 subordinate to a claim 1 or 2 considers the power supply for using the aforementioned game control unit and emission-control equipment within these equipments as the composition supplied from the power unit constituted separately, and the aforementioned backup means consists of backup power supply meanses which can supply a backup power supply to the aforementioned storage means, and it is characterized by to be prepared this backup power supply means in the exterior of the aforementioned emission-control equipment.

[0013] Invention according to claim 4 subordinate to a claim 1 or 2 The aforementioned game control unit and emission-control equipment consider the power supply for using it within these equipments as the composition supplied from the power unit constituted separately. the aforementioned power unit It is what generates a necessary power supply and is supplied to the aforementioned emission-control equipment in response to the power supply supplied from the outside of a game machine. the aforementioned backup means When the current supply from a power unit to emission-control equipment is cut off by cutting off the current supply from the game opportunity outside As the content of storage of the aforementioned storage means is held, it is the element which supplies a backup power supply to a storage means, and a backup means is characterized by being prepared in the aforementioned power unit.

[0014] It is characterized by invention according to claim 5 which is subordinate for any [claims 1 and 3 or] of 4 being making the aforementioned priority determination means the priority which gave the difference of game value supply by the size of the number of awarded balls among the number information of awarded balls currently held to the predetermined number information-storage field of awarded balls of the aforementioned storage means, and gave priority to the number information of awarded balls that the number of awarded balls is large.

[0015] It is characterized by for invention according to claim 6 which is subordinate for any [claims 1 and 3 or] of 4 being to make the aforementioned priority determination means the priority which gave the difference of game value supply by the size of the number of winning-a-prize spheres for every number of awarded balls among the number information of awarded balls currently held to the predetermined number information-storage field of awarded balls of the aforementioned storage means, and gave priority to the number information of awarded balls that the number of winning-a-prize spheres is large.

[0016] Invention according to claim 7 which is subordinate for any [a claim 1 or] of 6 being In the aforementioned number information-storage field of awarded balls of the aforementioned storage means Corresponding to each number information of awarded balls from the number information of the minimum awarded balls decided with the game machine to the number information of the maximum awarded balls, the number information data-storage element of awarded balls is formed. the aforementioned information-memory-processing means The addition storage of the transmitted number information of awarded balls is carried out at the aforementioned number information data-storage element of awarded balls corresponding to the number information of awarded balls concerned. Based on this addition storage, the aforementioned game value supply processing means is composition which supplies game value to a game person, and the aforementioned backup means is characterized by being what backs up so that the number information data-storage element of awarded balls corresponding to the number information of awarded balls and this number information of awarded balls may be held.

[0017] As for invention according to claim 8 subordinate to a claim 2, the reserve sphere sensor is arranged in the predetermined position of the reserve sphere passage by the side of a game machine rear face as one of the conditions of supply of game value, and the game value supply processing means of the aforementioned emission-control equipment is characterized by considering as the maximum of 1 time of the amount of supply of the game value which supplies collectively the number of game spheres guaranteed by the aforementioned reserve sphere sensor.

[0018] Invention according to claim 9 which is subordinate for any [a claim 1 or] of 8 being is characterized by having an information means to report supplying game value based on the number information of awarded balls currently held, when the number information of awarded balls is held at the power up of a game machine to the predetermined number information-storage field of awarded balls of the aforementioned storage means.

[0019]

[Embodiments of the Invention] Hereafter, with reference to a drawing, it explains as an example which applied the gestalt of operation of this invention to the pachinko game machine.

A. The transverse-plane block diagram 1 of a game machine is the front view of a game machine. In drawing 1 , 1 is a game machine called the so-called CR machine, and the card-system ball rental machine (only henceforth a ball rental machine) 2 is put side by side to the game machine 1. A card reader is built in the ball rental machine 2, and while the card slot 4 in which a prepaid card is inserted is formed in the front panel 3 of the ball rental machine 2, the key equipment 5 which locks a front panel 3 (structure which can be opened and closed) is formed.

[0020] The game machine 1 has the front-face frame 11 of the shape of a frame, the glass holder 12 made of a resin which supports glass, the game board 13 in which the game field was formed, the front display panel 14, and the front control panel 15 of the lower part of the front display panel 14. The front-face frame 11 of the shape of a frame is supported possible [opening and closing] on the up ginglymus 17 and the lower ginglymus 18 to the wooden machine frame 16 (refer to drawing 2), and the glass holder 12 is supported possible [opening and closing] by the front-face frame 11 of the shape of a frame. In addition, the glass holder 12 is locked possible [opening and closing] by key equipment 19.

[0021] In order to move the sphere of card ****** (******) 24 operated when discharging ****** 22 operated when purchasing a game sphere, the card frequency drop (card balance drop) 23 which displays the balance of a prepaid card, and a prepaid card, while the upper pan 21 which obtains awarded balls is formed in the front display panel 14, and the upper pan 21 to the below-mentioned lower pan 32, the opening-and-closing lever 25 for opening and closing the path which connects both is formed. In addition, illustration abbreviation is carried out although the loudspeaker which outputs game sound etc. is prepared in the interior of the upper pan 21. While an ash pan 31 and the lower pan 32 are formed, the sphere omission lever 33 for extracting the sphere stored by the lower pan 32 in an external lower part is formed in the front control panel 15. Moreover, the discharge operating knob 34 of a launcher is formed in the right end section side of the front control panel 15.

[0022] The upper pan 21 is formed in the bulge configuration in which it projects ahead from the front-face side of the front display panel 14, and the bottom portion of the upper pan 21 extends to near the soffit of the front display panel 14 while the upper surface opens wide and the sphere reservoir section which can store a game sphere is formed. Moreover, while being formed in the bulge configuration ahead projected from the front-face side of the game machine 1 in the upper pan 21 and the position approached comparatively while the upper surface opened the lower pan 32 wide and the sphere reservoir section which can store a game sphere was formed, the side wall material 35a and 35b is arranged at the both sides of the lower pan 32. And the **** wall surface 36 which **** so that it may apply to the front end section of the upper pan 21 near the contact part of the upper pan 21 concerned with which the front display panel 14 contacts in the bottom portion of the upper pan 21 formed in the bulge configuration and the central pars basilaris ossis occipitalis of the upper pan 21 may be shaved off for right and left is formed. By forming this **** wall surface, it is easy to rake out the game sphere of the lower pan 32, while the headroom of the lower pan 32 was secured greatly and the game person had turned his eyes to the game board 13, and it is possible to advertize the award balls stored by the lower pan 32 to the visitor of game machine 1 posterior part.

[0023] Next, although arbitrary composition can be taken even if it is a thing belonging to the "3rd sort" equipped with the thing or pattern display which belongs, for example to the so-called "1st sort", or other models if the game field in the game board 13 performs a game using a pachinko ball, with the gestalt of this operation, the thing of the type belonging to "the 1st sort" is used as an example. To the game board 13, the out sphere input 41, a rail 42, the special pattern display 43, the common electric accessory type starting winning-a-prize mouth 44, change winning-a-prize equipment 45 (large winning-a-prize mouth), The normal pattern starting gates 46 and 47, two or more general winning-a-prize mouths 48-50, the ** view starting storage drop 51, the hit ball directional change member (illustration abbreviation) usually called the pattern display 52, the normal pattern starting storage drop 53, the side lamps 54 and 55, and wind mill, and many obstacle nails (illustration abbreviation) are formed.

[0024] Two or more winning-a-prize mouths 44 (the ** view starting sensor 172 arranges inside) of all prepared in the game board 13 here, i.e., a starting winning-a-prize mouth, About change winning-a-prize equipment 45 (the below-mentioned count sensor [Large winning-a-prize mouth :] 173 inside arrangement) and the general winning-a-prize mouths 48-50 (the winning-a-prize sensors 175a-175b of the internal after-mentioned arrange) If the winning-a-prize sensor (it omits in proximity-sensor:, however drawing 1) is arranged for every winning-a-prize mouth and a prize of these winning-a-prize mouths is won, the number information of awarded balls will be transmitted to emission-control equipment 106 (refer to below-mentioned drawing 2) from the game control unit 107 (refer to below-mentioned drawing 2). While the great success drop 56 turned on at the time of great success (a blink state is also included) was formed in the upper part of the front-face frame 11 of the shape of a frame of the game machine 1, when a sphere is supplied to the side of the great success drop 56 from an island facility on the other hand, while switching on the light, the time of the supply lamp 57 which blinks in error generating, and awarded-balls eccrisis, and the awarded-balls lamp 58 which carries out [the lamp] ball rental and is sometimes turned on Moreover, the ****** existence drop 59 and the sphere eccrisis switch (SW) 60 are formed in the left-hand side lower part in drawing of the front-face frame 11 of the shape of a frame of the game machine 1. The ****** existence drop 59 blinks, when it consists of Light Emitting Diodes, it indicates whether there are any non-paid out awarded balls (suitably henceforth ******) at the time of power failure restoration etc., it reports to the official in charge of a game person or a game store, and there is ******, the light is switched on (state of putting out lights if there is nothing) and expenditure of ****** is performed. The sphere eccrisis switch (SW) 60 is the thing of a key type, and when it is turned on and there are non-paid out awarded balls at the time of power failure restoration etc. by a game salesclerk's inserting a predetermined key, making it rotate in the fixed direction, and twisting, it makes awarded-balls eccrisis perform compulsorily.

[0025] B. The back mechanism, next drawing 2 of a game machine are drawing showing the back mechanism of the game machine 1. In drawing 2 , as main parts of the back mechanism in the game machine 1 The reservoir tank (upper tank) 101, TWY 102, the terminal base (external terminal base) 103, the connection unit 104, the odd sensor 224 (refer to below-mentioned drawing 4), The eccrisis unit 105, emission-control equipment 106, the game control unit 107, the accessory relay base 108, the discharge unit 109, the card unit connection substrate 110, the current supply unit 111, the basis frame 112 (back mechanism base) of the back mechanism board, There are the sound control unit 113, the discharge control unit 115, a display controller 116, the ornament control unit 117, the ****** numeral machine 118, and a ****** information signal output terminal 119.

[0026] Two or more winning-a-prize mouths of all arranged at the game board 13 as mentioned above with the gestalt of this operation here, Namely, the winning-a-prize sensors 172, 173, 175a-175c (refer to drawing 4) are formed in the starting winning-a-prize mouth 44, change winning-a-prize equipment 45 (large winning-a-prize mouth), and the general winning-a-prize mouths 48-50. The sphere detected by these winning-a-prize sensors 172, 173, 175a-175c is discharged game outside the plane, without a stay mechanism (the so-called safe unit) like before staying temporarily for awarded-balls eccrisis. In addition, the sphere which won a prize from the winning-a-prize mouth of for example, not only when forming a winning-a-prize sensor in all winning-a-prize mouths, but the number of the same awarded balls is gathered by **, is packed in the **, and you may make it a winning-a-prize sensor detect it. The game control unit 107, the accessory relay base 108, and the sound control unit 113 are attached in the background of the game board 13 in this case, and the display controller 116 is arranged in the posterior part of a pin center,large accessory (specially pattern display 43). The installation position of each control unit is possible, when it naturally is not restricted to the mode of drawing 2 , for example, the game control unit 107 is attached in the basis frame 112.

[0027] The basis frame 112 is formed from the one cast made of synthetic resin, and is attached in the metal frame 121 fixed to the background of the front frame 11 of the game machine 1. And the parts of various kinds [top / basis frame 112 / this], For example, the reservoir tank 101, TWY 102, the terminal base 103, the connection unit 104, the discharge unit 105, emission-control equipment 106, the discharge unit 109, the card unit connection substrate 110, the current supply unit 111, the discharge control unit 115, The ornament control unit 117 etc. is attached (for example, the attachment component of one-touch is fixed), and the back mechanism board 114 is called as a concept which names generically these various parts and basis frames 112.

[0028] As for the metal frame 121, the game board stowage 122 which carries out receipt fixation removable is formed [board / game / 13 / nothing and] in the shape of a rectangle. Two or more game board adjustment catches which are carrying out illustration abbreviation are arranged in the game board stowage 122, and the game board 13 is fixed by two or more of those game board adjustment catches. The reservoir tank 101 stores the sphere before being discharged beforehand, shortage of the number of spheres of this reservoir tank 101 is detected by the supply sensor (illustration abbreviation), and when insufficient, a sphere is supplied from an island facility. The sphere in the reservoir tank 101 is guided by TWY 102, and is discharged by the eccrisis unit 105.

[0029] the eccrisis unit 105 has the function which carries out required-number eccrisis (eccrisis here -- awarded-balls eccrisis -- and ball rental is carried out and eccrisis is included) of the game sphere guided from the reservoir tank 101 based on a predetermined sphere eccrisis command signal (signal from emission-control equipment 106) to a game person side, and constitutes the exhaust equipped with the sphere eccrisis m chanism In addition, it has the sphere eccrisis path (illustration abbreviation) of two articles, and one sphere eccrisis path performs eccrisis for awarded balls, the sphere eccrisis path of another side carries out ball rental of the eccrisis unit 105, and it discharges business. That is, it has the composition of using the sphere eccrisis path of two articles properly by the use. The eccrisis for awarded balls is equivalent to supplying the game value generated in the game to a game person.

[0030] It is detected [awarded-balls eccrisis and] by the odd sensor 224 (reserve sphere sensor) on TWY 102, respectively whether ball rental is carried out and there is any sphere for eccrisis. The odd sensor 224 is formed in each path (namely, an awarded-balls eccrisis path (reserve sphere passage) and carrying out ball rental eccrisis path (reserve sphere passage)) of two articles by the couple. The odd sensor 224 is the predetermined position of the reserve sphere passage by the side of game machine 1 rear face as one of the conditions of supply of game value (game sphere), for example, is formed in the position which can discharge about 100 game spheres. Therefore, the game sphere which is filling the reserve sphere passage from the eccrisis unit 105 to the odd sensor 224 is equivalent to the number of game spheres guaranteed by the reserve sphere sensor. The terminal base 103 performs relay about the input of an AC power, transfer of the signal between the hole computers (management equipment : illustration abbreviation) of a game store, etc., and is classified into the relay section and the connector area (connection with a hole computer is made), and both are connected by the cable.

[0031] Emission-control equipment 106 is attached in the basis frame 112, controls various electrical parts (for example, electric driving source of the eccrisis unit 105) required for eccrisis of a sphere, and the control board which realizes this control function in a predetermined case is contained, and it is constituted. The game control unit 107 performs various control required for an accessory game, and the control board which realizes this control function in a predetermined case is contained, and it is constituted. The accessory relay base 108 performs connection relay of the cable between the accessory, the side lamps 51 and 52, and the change winning-a-prize equipment 45 grades and the game control units 107 arranged at the game board 13. The discharge unit 109 is a mechanism for discharging a sphere according to operation of the discharge operating knob 34 prepared in the front lower part of the game machine 1. The card unit connection substrate 110 is for connecting to the game machine 1 the cable 123 which extends from the ball rental machine 2, and is equipped with the carrying member (for example, scalpel type connector) which receives the connector in the edge of a cable 123.

[0032] the winning-a-prize sphere set which the space down which a winning-a-prize sphere can flow is formed [set] in the rear-face side of the game board 13, and gathers a winning-a-prize sphere -- a member 141 prepares -- having -- **** -- this winning-a-prize sphere set -- a member 141 For example, it has the function to lead the sphere which passed the ** view starting sensor 172, the count sensor 173, and the winning-a-prize sensors 175a-175c (r fer to drawing 4) with the safe ball (winning-a-prize sphere) into which it went for every winning-a-prize mouth of the game board 13 by the transparent products made of a resin (PC resin etc.). and this winning-a-prize sphere set -- the safe spheres led by the member 141 are collected by the downward winning-a-prize sphere set shelf 142, and, subsequently are discharged by the exterior of the game machine 1 from the sphere exhaust port 144 through close awarded-balls ****** 143 Incidentally, although it was the composition that a safe unit was arranged at close awarded-balls ****** 143, conventionally, since the safe unit is not prepared with the gestalt of this operation, it is only that a safe sphere only passes close awarded-balls ****** 143. The winning-a-prize sphere set shelf 142 is formed in the basis frame 112, and is fabricated by the synthetic-resin member. Moreover, close awarded-balls ****** 143 is similarly formed in the basis frame 112, and is fabricated by the synthetic-resin member.

[0033] out ******** (illustration ellipsis) is prepared in the rear-face side of the game board 13, this out ******** makes it flow down the sphere (out sphere) which flowed into the out mouth 41 of the game field lower part, and it discharges from the sphere exhaust port 144 to the exterior of the game machine 1 -- it is like (that is, flowing-down guidance of the out sphere is carried out to the rear-face side of the game machine 1) In addition, the sphere exhaust port 144 discharges similarly outside the winning-a-prize sphere 11 which has passed close awarded-balls ****** 143 as mentioned above. The current supply unit 111 supplies a power supply to each control unit of emission-control equipment 106, the game control unit 107, and sound control unit 113 grade, and mentions it later by drawing 3 for details. The sound control unit 113 performs control which outputs various sound effects suitably according to a game state, and the control board which realizes this control function in a predetermined case is contained, and it consists of loudspeakers (illustration abbreviation) arranged in the front face of the game machine 1 etc. The cable splicing of the sound control unit 113 is carried out to the control board of the game control unit 107, and transfer of the signal which shows a game state is performed.

[0034] The discharge control unit 115 controls various electrical parts (for example, electric driving source of the discharge unit 109) required for discharge of a sphere, and the control board which realizes this control function in a predetermined case is contained, and it is constituted. A display controller 116 controls a pin center,large accessory according to the instructions outputted from the game control unit 107, displays a predetermined picture on the display (namely, specially display of the pattern display 43) of the front face of a pin center,large accessory, and the control board which realizes this control function in a predetermined case is contained, and it is constituted. The ornament control unit 117 controls the operation (lighting or putting out lights) of the lamps for an ornament arranged in the front face of the game machine 1 etc., and too, the control board which realizes this control function in a predetermined case is contained, and it is constituted.

[0035] the number of storage awarded balls (for example, seven-piece awarded balls and 15-piece awarded balls) currently held when the ****** numeral machine 118 consists of 2 sets of 7 segment drops (refer to below-mentioned drawing 9) and there are non-paid out awarded balls (******) at the time of power failure restoration etc. -- the non-paid out number of awarded balls is displayed independently Since the ****** numeral machine 118 is arranged at the case (rear-face side of the game machine 1) of emission-control equipment 106, it sees, for example for a check of a game salesclerk, or it also shows a game person, and it can avoid a trouble. The ****** information signal output terminal 119 tells that ****** is in management equipment by consisting of connectors attached in the basis frame 112, being a terminal in the case of outputting as a signal that there are non-paid out awarded balls (******) at the time of power failure restoration etc. to the game machine 1 exterior, for example, connecting the wiring from the management equipment of a game store to this ****** information signal output terminal 119. Moreover, when inspecting the game machine 1 in the 3rd person engine by using the ****** information signal output terminal 119, the check of whether ****** eccrisis is performed correctly [this game machine 1] at the time of the return from the time of a power failure can be made easy.

[0036] Here, the ****** existence drop 59 mentioned above, the ****** numeral machine 118, and the ****** information signal output terminal 119 constitute an information means to report supplying game value based on the number information of awarded balls currently held, when the number information of awarded balls is held at the power up of the game machine 1 to the predetermined number information-storage field of awarded balls (the below-mentioned awarded-balls data memory area) of RAM203 (storage means). In addition, although it does not report that the ****** information signal output terminal 119 supplies game value directly, it is telling ****** being in management equipment, and supplying game value indirectly will be reported. In the ****** existence drop 59, the information, the ****** numeral machine 118, and the ****** information signal output terminal 119 to a game person perform information by the side of a game store.

[0037] C. The current supply schematic diagram 3 is drawing showing the current supply system in the game machine 1. In drawing 3 , from the exterior, AC24V are supplied and AC24V which are an external power are indirectly distributed to the game machine 1 through the terminal base 103 at the current supply unit 111. The current supply unit 111 changes AC24V into a direct current, generates various kinds of DC voltage, and supplies it to each control unit. Specifically, while generating DC12V for DC30V for a solenoid drive, DC24V for a lamp drive, the object for a sensor drive, and a back light drive as a power supply for a drive, DC12V are generated as a power supply for control units for operating each control unit. DC30V and DC12V -- the discharge control unit 115 -- DC24V and DC12V -- emission-control equipment 106 -- DC32V, DC24V, and DC12V -- the game control unit 107 -- DC12 -- DC30V, DC24V, and DC12V are supplied to the ornament control unit 117, and DC12V are supplied for V to the sound control unit 113 at a display controller 116 [and] Therefore, while the game control unit 107 and emission-control equipment 106 have composition supplied from the current supply unit 111 (a power unit is constituted) constituted separately in the power supply for using it within these equipments, the current supply unit 111 is composition which generates a necessary power supply in response to supply of a power supply (AC24V) from the game machine 1 exterior, and is supplied to emission-control equipment 106.

[0038] According to the amount of rotation of the discharge operating knob 34, discharge unit 109 (launcher) control of the discharge control unit 115 is carried out, and control which fires a game sphere by the strength corresponding to the amount of rotation is performed. In addition, when discharge operation of the discharge unit 109 is stopped when a discharge enable signal is inputted into the discharge control unit 115 from emission-control equipment 106 and a certain abnormalities produce a discharge enable signal in the emission-control equipment 106 side, or abnormalities are canceled, it is the signal which enables discharge operation. Moreover, the discharge control unit 115 will output a discharge manipulate signal to emission-control equipment 106, if the discharge operating knob 34 is operated by the game person. In addition, with the gestalt of other below-mentioned operations, if a discharge manipulate signal is equivalent to the game execution signal generated by execution of a game and this discharge manipulate signal is inputted to emission-control equipment 106, emission-control equipment 106 will judge that the game value supply start condition was satisfied.

[0039] Based on the awarded-balls data (the number information of awarded balls) transmitted from the game control unit 107, emission-control equipment 106 controls the energization to an eccrisis solenoid based on the detecting signal from an eccrisis sensor, and performs control which makes the game sphere of a predetermined number discharge. Moreover, emission-control equipment 106 performs control in accordance with carrying out ball rental, delivering and receiving a signal between the ball rental machines 2 (the so-called CR sand unit). Here, ball rental is carried out and carried out between the ball rental machine 2 and emission-control equipment 106, and a control procedure is explained. For convenience, positive logic explains transfer of a signal. If the PRDY signal outputted from emission-control equipment 106 (namely, pachinko game machine 1) is in the state of Hi, emission-control equipment 106 will judge the ball rental machine 2 to be the state where emission control of a sphere can be performed. The ball rental machine 2 will receive operation of ****** 22, if emission-control equipment 106 is in the state where emission control of a sphere can be performed, and if there is an input from ****** 22, it will set to Hi the BRDY signal which connects the purport by which a ball rental demand (BRQ signal) is given to emission-control equipment 106 after this. If a BRDY signal is set to Hi, emission-control equipment 106 will make the preparations which perform emission control of the sphere for a sphere loan, and will supervise the BRQ signal which is a ball rental demand signal.

[0040] If, as for emission-control equipment 106, Hi of this BRQ signal is received by setting a BRQ signal to Hi after predetermined-time progress after the ball rental machine 2 sets a BRDY signal to Hi While setting to Hi the EXS signal which informs the ball rental machine 2 received the BRQ signal to the ball rental machine 2 After discharging the sphere of a predetermined unit (they are 25 pieces for example, at BRQ signal 1 pulse) and completing this eccrisis When it connected that set the EXS signal currently outputted to Lo and the eccrisis of a sphere based on a BRQ signal was completed to the ball rental machine 2, and the BRDY signal was still continuing Hi, a BRQ signal is supervised again and a BRDY signal is set to Lo, ball rental is carried out and emission-control processing is ended. On the other hand, if Hi of the outputted EXS signal is checked after the ball rental machine 2 sets a BRQ signal to Hi, it will set a BRQ signal to Lo and will supervise an EXS signal. A BRDY signal is set to Lo, when setting a BRQ signal to Hi like [when performing a ball rental demand continuously] the above and not performing a ball rental demand, if Lo of this EXS signal is checked.

[0041] The game control unit 107 is a control unit which performs all-inclusive control of a game, and it transmits the number information of awarded balls for supplying the game value generated in the game to a game person while it controls advance of the game in the 13th page of the game board. That is, in the portion about awarded-balls control of a game sphere, if winning a prize of a game sphere is detected by each winning-a-prize mouths 44 and 45 of the game board 13, and the winning-a-prize sensors 172, 173, 175a-175c formed for every 48-50, the number of awarded balls set up beforehand will be transmitted to emission-control equipment 106. A display controller 116 supplies the power supply to the pattern display 43 specially while controlling the image display of the pattern display 43 specially based on the indicative data transmitted from the game control unit 107. The ornament control unit 117 supplies the power supply to this luminescence ornament member while controlling luminescence of a side lamp etc. based on the ornament data transmitted from the game control unit 107. The sound control unit 113 performs control about a sound effect, such as generating a sound effect based on the sound data transmitted from the game control unit 107.

[0042] D. The control schematic diagram 4 is drawing showing the control system in the game machine 1. In drawing 4 , the game control unit 107 is constituted including the processing unit 160 for games (microcomputer for games) which consists of an one chip microcomputer which performs accessory control required for a pachinko game etc., the clock generation circuit (CLK) 161 which carries out dividing of the oscillation frequency of crystal, and obtains a predetermined clock, the input interface 162 which accepts various sensor signals, and the output interface 163. The processing unit 160 for games builds in CPU, ROM, and RAM, and is manufactured as an IC for the so-called AMYUZU chip.

[0043] In the input interface 162 All th spheres entered to the continuation sensor (switch) 171 which detects the so-called sphere which carried out continuation winning a prize (V winning a prize) among the spheres included in change winning-a-prize equipment 45, the ** view starting sensor 172 which detects winning a prize to the ** view starting winning-a-prize mouth (usually electric accessory type starting winning-a-prize mouth) 44, and change winning-a-prize equipment 45 The signal from the count sensor 173 to detect, the normal pattern starting gate sensor 174 which detects that the sphere passed through the normal pattern starting gates 46 and 47, and the winning-a-prize sensors 175a-175c which detect the sphere which won a prize of the general winning-a-prize mouths 48-50 of the game board 13 is inputted. In addition, when there are n general winning-a-prize mouths of the game board 13, n winning-a-prize sensors are arranged. From the output interface 163, a signal is usually outputted to a display controller 116, the ornament control unit 117, the sound control unit 113, the discharge control unit 115, and the large winning-a-prize mouth solenoid 182 that carries out the opening-and-closing drive of the pattern display 52 and the large [with which change winning-a-prize equipment (usually electric accessory / Namely, the starting winning-a-prize mouth 44 /) is usually driven] winning-a-prize mouth which are the electric accessory solenoid 181 and change winning-a-prize equipment 45.

[0044] Next, emission-control equipment 106 is constituted including CPU201, ROM202, RAM203, the clock generation circuit (CLK) 204 that obtains a predetermined clock, the interface 205 for an input, the interface 206 for an output, the logic power circuit 207, the power failure detector 208, and the diode 209 for antisuckbacks. In addition, it connects by the address bus, the data bus, the power supply line, etc. between each element. CPU201 performs processing required for eccrisis (awarded-balls eccrisis and eccrisis of a sphere on hire are included) of a game sphere, and ROM202 stores the program required for emission control etc.

[0045] RAM203 is used as a work area, has a function as a storage means by which information is memorizable, and is constituted as an independent element with separate CPU201. RAM203 has the awarded-balls data memory area (the number information-storage field of awarded balls) which stores the number information of awarded balls (expenditure of awarded balls is two lines, seven-piece awarded balls and 15-piece awarded balls, at the gestalt of this operation), the various data memory areas which store various data, other work memory areas, etc. Here to the awarded-balls data memory area of RAM203 As shown in drawing 5 (a) The game machine 1 Regulation of the food and entertainment businesses to regulate And the number of the minimum awarded balls decided by the law about rationalization of business etc. the number information of the minimum awarded balls -- considerable: -- The number of the shell minimum awarded balls which is the awarded-balls number =1 [minimum] = 1 It corresponds to each number of awarded balls (each number information of awarded balls -- considerable: -- in the pachinko game machine, regulated within the limits of one-piece awarded-balls - 15-piece awarded balls) from becoming to the number of the maximum awarded balls (the number information of the maximum awarded balls — considerable: — the maximum number of awarded balls — since it is =15 — number of maximum awarded balls = — it becomes 15). The number addition memory of awarded balls (equivalent to the number information data-storage element of awarded balls) which has the size of 1 byte, respectively is secured beforehand, and is formed 15 pieces, and, in the case of the gestalt of this operation, the awarded-balls data memory area has the capacity of 15 bytes (1 byte x 15 pieces). It is good to secure preferably the field where it continued for 15 bytes as an awarded-balls data memory area. Moreover, the area (refer to drawing 5 (c)) of the priority memory at the time of in addition to this determining the priority of the awarded-balls expenditure in a power up is prepared.

[0046] CPU210 performs processing which makes the number addition memory of awarded balls of RAM203 corresponding to the number information of awarded balls concerned carry out the addition storage of the number information of awarded balls transmitted from the game control unit 107 one by one, and emission-control equipment 106 performs eccrisis processing based on the addition storage memorized by the number addition memory of awarded balls. The set-up number of awarded balls in the game control unit 107 (game board 13) connected to emission-control equipment 106 For example, seven pieces For example, (game worth of starting winning a prize and game worth of general winning a prize), or 15 pieces When it is the composition of (for example, game worth of change winning-a-prize equipment (large winning-a-prize mouth) 45), The number information of awarded balls is added to the addition memory which corresponds corresponding to the number information of awarded balls transmitted to RAM203 from the game control unit 107 using the number seven-piece addition memory of awarded balls of the awarded-balls data memory area secured beforehand, and the number 15-piece addition memory of awarded balls. The addition storage of the number information of awarded balls is specifically carried out from the game control unit 107 in area called the number seven-piece addition memory of awarded balls of the number addition memory of awarded balls of RAM203 of emission-control equipment 106 whenever there is starting winning a prize or general winning a prize. Based on this addition storage, CPU210 of emission-control equipment 106 performs eccrisis processing of seven-piece awarded balls (for example, the 1st eccrisis solenoid 233 in the direction of the below-mentioned awarded-balls eccrisis is driven (ON), and a game sphere is made to discharge from the eccrisis unit 105). However, since seven-piece awarded balls and 15-piece awarded balls are intermingled and generated in fact, at the time of ****** eccrisis of the power up of the game machine 1, the priority of expenditure is determined like the after-mentioned and awarded-balls eccrisis is performed. On the other hand, the addition storage of the number information of awarded balls is carried out from the game control unit 107 in area called the number 15-piece addition memory of awarded balls of the number addition memory of awarded balls of RAM203 of emission-control equipment 106 whenever winning a prize to change winning-a-prize equipment (large winning-a-prize mouth) 45 is, and CPU210 of emission-control equipment 106 performs eccrisis processing of 15-piece awarded balls based on this addition storage.

[0047] With the gestalt of this operation here, the content of storage of RAM203 is the composition which can back up by the capacitor 212 like the after-mentioned. Therefore, when the number information of awarded balls is held at the awarded-balls data memory of RAM203 especially at the power up (the time of power failure restoration is included) of the game machine 1, With reference to the whole number information of awarded balls (addition storage is included) currently held, processing which determines the priority of awarded-balls expenditure (game value supply) from the reference result is performed, and awarded-balls expenditure is performed by the determined priority (it writes in the priority memory of drawing 5 (c)). In addition, a power up determines priority to the last, and, sometimes, it does not usually make a priority decision. The priority decision of the awarded-balls expenditure in a power up is made by the following methods. Namely, the maintenance data (drawing 5 (b) shows) of the number addition memory of awarded balls in a power up are seen. When the number of two or more awarded balls is held from addition storage of each number of awarded balls (seven pieces, 15 pieces), It is determined that the priority of awarded-balls expenditure will give priority to and pay out what has the large number of awarded balls (equivalent to considering as the priority which gave the difference of game value supply by the size of the number of awarded balls, and gave priority to the number information of awarded balls that the number of awarded balls is large). For example, as shown in drawing 5 (b), the maintenance data of the number seven-piece addition memory of awarded balls write in the priority memory with which the maintenance data of 10 and the number 15-piece addition memory of awarded balls determine that priority will give priority to and pay out 15-piece awarded balls with the large number of awarded balls when it is 7, and indicate it to be to drawing 5 (c). CPU210 sees the priority written in priority memory, and performs expenditure processing of awarded balls.

[0048] The processing which makes the number addition memory of awarded balls corresponding to the number information of awarded balls concerned carry out the addition storage of the number information of awarded balls to RAM203, And when the number information of awarded balls is held at the power up of the game machine 1 at the number addition memory of awarded balls of RAM203, With reference to the whole number information of awarded balls currently held, processing which determines the priority of expenditure of awarded balls from the reference result is performed by CPU201, and the applicable program of CPU201 realizes the function of an information-memory-processing means and a priority determination means. Moreover, processing which supplies the game sphere (game value) as awarded balls to a game person based on the addition storage in the number addition memory of awarded balls of RAM203, and processing which suppli s a game sphere (game value) by the predetermined priority determined by the priority determination means are performed by CPU201, and the applicable program of CPU201 realizes the function of a game value supply processing means. In addition, elimination of the number information of awarded balls concerning eccrisis processing is performed, when for example, awarded-balls eccrisis is completed, or when awarded-balls eccrisis is started.

[0049] DC12V are supplied to the logic power circuit 207 from the current supply unit 111 (a power unit is constituted), and the logic power circuit 207 changes DC12V into DC5V, and supplies a power supply required for operation of each element of the above CPU201 and ROM202 and RAM203 grade. DC5V are supplied to RAM203 from the logic power circuit 207 through the diode 209 which functions as an irreversible means. Moreover, DC5V from the current supply unit 111 are supplied also to the capacitor (super capacitor) 212 arranged inside the current supply unit 111 through Wiring 211a and 211b. Only by being arranged on the substrate of the current supply unit 111 (or not a substrate top but another object being sufficient), the capacitor 212 has received supply of a power supply from the logic power circuit 207 by the side of emission-control equipment 106. In the middle of Wiring 211a and 211b, the male / scalpel type connector (illustration abbreviation) is prepared, and a connector can separate Wiring 211a and 211b into the current supply unit 111 and emission-control equipment 106 side.

[0050] If the connection state of RAM203 and a capacitor 212 is explained in detail, the power terminal of RAM203 is connected so that the logic voltage generated within emission-control equipment 106 may be received through diode 209, and this power terminal is connected to the potential of plus of the capacitor 212 further arranged to the current supply unit 111. On the other hand, the grand level of a capacitor 212 flows through it to the gland of emission-control equipment 106 through wiring 211b while a capacitor 212 is maintained by the charge state in response to the supply which is DC5V which is the logic voltage which the logic power circuit 207 of emission-control equipment 106 generated. Therefore, the logic power supply generated within emission-control equipment 106 also charges a capacitor 212 while it is supplied to the power terminal of RAM203 through diode 209 and enables the operation of RAM203. In addition, since the capacitor 212 is charged through diode 209, it has the composition of backing up only RAM203, at the time of a power failure, and the voltage of a capacitor 212 is not supplied to other circuits. A capacitor 212 constitutes a backup means to back up so that the content of storage of the number information of awarded balls in RAM203 (storage means) may be held. Moreover, especially as for the capacitor 212, the backup means is constituted from a gestalt of this operation to RAM203 (storage means) by the backup power supply means which can supply a backup power supply to hold the content of storage of the number information of awarded balls on RAM203 (storage means). This capacitor 212 (backup power supply means) has composition prepared in the exterior (the gestalt of this operation current supply unit 111) of emission-control equipment 106.

[0051] With the gestalt of this operation, moreover, the capacitor 212 as a backup power supply means (backup means) When the current supply from the current supply unit 111 (power unit) to emission-control equipment 106 is cut off by cutting off the indirect current supply from the game machine 1 outside It is the element which supplies a backup power supply to RAM203 (storage means) so that the content of storage of RAM203 (storage means) may be held. And the backup power supply means (backup means) has composition prepared in the current supply unit 111 (power unit). In addition, not only a capacitor but a cell is sufficient as a backup power supply means (backup means). Moreover, by constituting not backup but RAM (storage means) by the power supply from nonvolatile elements (for example, EEPROM, a flash memory, etc.), it may constitute so that oneself can back up the number information of awarded balls, and the RAM itself includes a backup means in that case. If the power failure detector 208 detects that the current supply from the current supply unit 111 to the logic power circuit 207 was cut off (it detects as a power failure when DC12V fall to predetermined voltage) and it is that the electric current is cut off about it, interruption will start CPU210 compulsorily and it will stop operation of CPU210.

[0052] The sphere omission sensor 221 which detects the change state of the sphere omission path which samples the game sphere in the game machine 1 outside for the interface 205 for an input of emission-control equipment 106, the 1st eccrisis sensor 222 for awarded-balls eccrisis, the 2nd eccrisis sensor 223 for a sphere loan, the path for awarded balls (Reserve sphere path) inside -- odd -- a sensor -- 224 -- lower -- a pan -- 32 -- full -- a state (superfluous reservoir of a sphere) -- detecting -- overflow -- a sensor -- 225 -- RAM -- 203 -- the content -- clearing -- a reset switch -- (-- SW --) -- 226 -- a salesclerk -- compulsory -- awarded balls -- eccrisis -- carrying out -- making -- a sake -- The signal from the sphere eccrisis switch 60 to operate is inputted. In addition, since it is the composition that a salesclerk operates the sphere eccrisis switch 60 and performs awarded-balls expenditure when the number information of awarded balls that it does not pay out is held with the gestalt of this operation at the power up (at for example, the time of power failure restoration) at the awarded-balls data memory of RAM203, Although the signal from the sphere eccrisis switch 60 is inputted into emission-control equipment 106 At the time of the composition which performs unpaid awarded-balls expenditure based on a game execution signal as shown in the gestalt of not only this but other below-mentioned operations It becomes the composition that the discharge manipulate signal HS (for example, signal turned on if a game person operates the discharge operating knob 34) is inputted into the interface 205 for an input. Therefore, although the discharge manipulate signal HS is not used with emission-control equipment 106 in the gestalt of this operation, it is shown in drawing 4 on account of explanation.

[0053] moreover, the sphere omission solenoid 232 for changing the sphere omission path which samples the game sphere in the ****** existence drop 59, the ****** numeral machine 118, the ****** information signal output terminal 119 (a function is mentioned above), 7 segment drop 231, and the game machine 1 outside from the interface 206 for an output and the 1st eccrisis solenoid 233 for awarded-balls eccrisis -- ball rental is carried out and a control signal is outputted to the 2nd eccrisis solenoid 234 of business As shown in drawing 1 , the ****** existence drop 59 is arranged at the flank of the game machine 1, and displays and reports the existence of the awarded balls which are not paid out in the time of power failure restoration etc. The ****** numeral machine 118 is a Light Emitting Diode drop of seven segment types which display the number of storage of the present number information of awarded balls memorized by the awarded-balls data memory of RAM203, and has composition which put two Light Emitting Diodes side by side as shown in drawing 9 (a). That is, it indicates how many the ****** numeral machine 118 has Light Emitting Diode of 1 figure corresponding to seven awarded balls, and Light Emitting Diode of 2 figures corresponding to 15 awarded balls, and has the two number information of awarded balls of "7" and "15." For example, as shown in drawing 9 (b), the number of awarded balls whose numbers of awarded balls of seven awarded balls are two pieces and 15 awarded balls displays by Light Emitting Diode of seven segments like zero piece. This is displaying the number of storage of the present number information of awarded balls, and judgment how many there is any number of awarded balls for un-discharging of it is enabled, and it enables it to avoid trouble generating between a game person and a game store. The ****** existence drop 59, the ****** numeral machine 118, and the ****** information signal output terminal 119 constitute an information means.

[0054] Next, an operation is explained.

"Emission-control processing" drawing 6 is a flow chart which shows the program of the emission-control processing performed by emission-control equipment 106. Emission-control equipment 106 distinguishes first whether you are powering on at Step S1. The restoration from a power failure is also included in judgment of powering on here. If it checks whether it progresses to Step S2 and the number information of awarded balls (awarded-balls data) is in an awarded-balls data memory area (the number information-storage field of awarded balls) and there is no storage, initialization processing will be performed at Step S3 at the time of powering on, and it will shift to step S9. In initialization processing, clearance of the work area data of RAM203, various initial setting, etc. are performed.

[0055] On the other hand, when the number information of awarded balls (awarded-balls data) is in an awarded-balls data memory area at Step S2, it progresses to step S4 and ****** information processing is performed (for example, when there are unpaid awarded balls). While performing information which tells the purport which has unpaid awarded balls in ****** information processing with the ****** existence drop 59 arranged at the front-face side of the game machine 1 It expresses as the ****** numeral machine 118 in which the number information of awarded balls which remains was prepared by emission-control equipment 106 (for example, display shown in drawing 9 (b)), or the signal which tells the purport which has unpaid awarded balls through the ****** information signal output terminal 119 further is outputted to the game machine 1 exterior. In addition, at the time of a power fail recovery, a salesclerk opens the rear-face side of the game machine 1, and checks the ****** numeral machine 118. Drawing 9 (a) is the case where there are no maintenance data in awarded-balls data memory, and drawing 9 (b) shows maintenance data called 7 piece awarded-balls =2 and 15 piece awarded-balls =0. Since a subtraction indication of the value of the ****** numeral machine 118 is given while unpaid awarded balls are discharged, it is checking this by looking and can check that unpaid awarded balls are discharged certainly. Although it has distinguished with the gestalt of this operation like "seven-piece awarded balls" and "15-piece awarded balls" when displaying the maintenance data of awarded-balls data memory, you may make it display maintenance data in the mode "awarded-balls smallness" and "awarded-balls size", as shown not only in this but in drawing 9 (c). When it does in this way, for example the number of awarded balls changes with game boards, it is not necessary to make it the mode which displayed the number of awarded balls clearly one by one like five-piece awarded balls / 13-piece awarded balls, or seven-piece awarded balls / 13-piece awarded balls, versatility can be given to the ****** numeral machine 118, and cost can also be reduced.

[0056] Before paying out unpaid awarded balls, while the ****** existence drop 59 was turned on (it maintains in the lighting state) and the awarded balls for arrears have paid out by the below-mentioned step S8, processing which blinks the ****** existence drop 59 is performed. Thereby, a game person or a salesclerk can be made to recognize clearly how arrears awarded balls are processed. Moreover, by displaying the number information of awarded balls on the ****** numeral machine 118, it can report to a game salesclerk how many there is any number of awarded balls for un-discharging, or the check to the game person by the game salesclerk can be performed at the time of a trouble. Furthermore, it can check that a management equipment side also has unpaid awarded balls by outputting the signal which tells the purport which has unpaid awarded balls from the ****** information signal output terminal 119 to the management equipment of the game machine 1 exterior.

[0057] Subsequently, it distinguishes whether the eccrisis start condition is satisfied at Step S5. It judges whether this is ready for the ability discharging a game sphere, and a sphere is in the odd sensor 224, and when a sphere is in the 1st eccrisis sensor 222 for not overflow (the overflow sensor 225 turns off) but awarded-balls eccrisis in the lower pan 32, an eccrisis start condition is satisfied. If the eccrisis start condition is not satisfied, it stands by to Step S5 and an eccrisis start condition is satisfied, it will distinguish whether it progresses to Step S6 and there is any input of the sphere eccrisis switch 60. This judges whether the salesclerk inserted the predetermined key in power ups, such as at the time of power failure restoration etc., and made them turn on the sphere eccrisis switch 60. For example, when the salesclerk who checked that the ****** existence drop 59 was on has recognized it as there being awarded balls which are arrears, it is the case where operation of making awarded-balls eccrisis performing compulsorily is performed. If there is no input of the sphere eccrisis switch 60, it will stand by to this step S6 and alter operation of the sphere eccrisis switch 60 will be performed, it will progress to Step S7 and an awarded-balls data memory priority processing will be performed. In an awarded-balls data memory priority processing, when the number of two or more awarded balls is held from the reference result with reference to the whole maintenance data of the number addition memory of awarded balls in a power up, it determines that the priority of awarded-balls expenditure will give priority to and pay out what has the large number of awarded balls, and writes in priority memory.

[0058] If an example explains, the number information of awarded balls of the seven-piece awarded balls and 15-piece awarded balls which were transmitted from the game control unit 107 Addition storage is carried out at the number seven-piece addition memory of awarded balls of the awarded-balls data memory area beforehand secured to RAM203, and the number 15-piece addition memory of awarded balls, respectively. At this time For example, awarded-balls number 7 piece addition memory =10, the number 15-piece addition memory of awarded balls = the data will be backed up and held supposing it is that the electric current is cut off in the state of calling it 7. Then, if it restores from a power failure, the maintenance data of a power up are maintenance data (for seven-piece awarded balls, 10 or 15-piece awarded balls are 7) of the addition storage corresponding to each number of awarded balls (seven pieces, 15 pieces), as shown in drawing 5 (b). Since the number of awarded balls of 15-piece awarded balls is large at this time, it determines that the priority of awarded-balls expenditure will give priority to and pay out 15-piece awarded balls as a priority of a power up, and the determination result is written in priority memory like drawing 5 (c). Namely, ranking of ranking [of 15 piece awarded balls] = 1 or 7-piece awarded balls = it writes in with 2.

[0059] Subsequently, awarded-balls eccrisis processing is performed at Step S8. In awarded-balls eccrisis processing, according to the data written in the priority memory of an awarded-balls eccrisis memory area, drive control of the eccrisis unit 105 (unit containing the 1st eccrisis solenoid 233, the 1st eccrisis sensor 222, an actuator, etc.) is carried out, and awarded-balls eccrisis is performed. For example, when being written in the priority memory of an awarded-balls eccrisis memory area by the priority processing like the above-mentioned example with ranking =2 of ranking [of 15 piece awarded balls] = 1 or 7-piece awarded balls, the eccrisis unit 105 drives, and 15-piece awarded balls (the number of awarded balls in change winning-a-prize equipment (large winning-a-prize mouth) 45) have priority and pay out. And an end of expenditure of 15-piece awarded balls performs expenditure of seven-piece awarded balls. In addition, while awarded-balls eccrisis for arrears is performed, the ****** existence drop 59 blinks and it is reported to a game person or a salesclerk. If it passes through Step S8, it will return to Step S2 and a loop will be repeated.

[0060] The function of Step S7 gives the difference of game value supply by the size of the number of awarded balls among the number information of awarded balls that the priority determination means is held to the predetermined number information-storage field of awarded balls (awarded-balls data memory area) of a storage means (RAM203), and is equivalent to considering as the priority which gave priority to the number information of awarded balls that the number of awarded balls is large. Thus, since what has the large number of awarded balls is given priority to and paid out with reference to the whole maintenance data of the number addition memory of awarded balls in a power up, it can pay out immediately more than the constant rate which a game person expects a non-paid out sphere.

[0061] Here, the modification of an awarded-balls data memory priority processing is explained.

Although what has the large number of awarded balls is given priority to and paid out with the gestalt of ″modification″ book operation with reference to the whole maintenance data of the number addition memory of awarded balls in a power up, priority is given to what has the large number of winning-a-prize spheres for every winning-a-prize sphere, and you may make it pay out with reference to the whole maintenance data of the number addition memory of awarded balls of not only this but a power up. specifically, it is shown in drawing 5 (b) -- as -- the maintenance data of the number addition memory of awarded balls -- the number of awarded balls -- 7 piece addition memory =10 and the number of awarded balls, since the number seven-piece addition memory of awarded balls is [the number of winning-a-prize spheres] larger in it being in the state of 15 piece addition memory =7 This is chosen and priority is given to seven-piece awarded balls, as shown in drawing 5 (d), it writes in ranking memory with ranking =2 of ranking [of seven piece awarded balls] = 1 or 15-piece awarded balls, and awarded balls are paid out according to this ranking. The function of this modification gives the difference of game value supply by the size of the number of winning-a-prize spheres for every number of awarded balls among the number information of awarded balls that the priority determination means is held to the predetermined number information-storage field of awarded balls (awarded-balls data memory area) of a storage means (RAM203), and is equivalent to considering as the priority which gave priority to the number information of awarded balls that the number of winning-a-prize spheres is large.

[0062] What has the large number of winning-a-prize spheres for every winning-a-prize sphere has priority as it is such composition, and since eccrisis processing is carried out, there are the following effects.

** It is lost that only the awarded balls (for example, 15-piece awarded balls) which are not paid [which] out project, and are memorized, and the storage capacity of each number addition memory of awarded balls in awarded-balls data memory equalizes immediately.

** Since eccrisis processing of the number of awarded balls with many winning-a-prize spheres is carried out previously, it can prevent that the maintenance data of the number addition memory of awarded balls memorized by awarded-balls data memory become memory over.

** A game person knows clearly many which awarded balls were memorized by awarded-balls data memory with the ball by which continuation eccrisis is carried out. for example, the awarded balls are known by how many eccrisis sound of a sphere continue, and they are seven-piece awarded balls -- or it is distinguishable whether they are 15-piece awarded balls

** For example, even if it was that the electric current is cut off and the winning-a-prize storage (getting it blocked storage of the number 15-piece addition memory of awarded balls) to change winning-a-prize equipment (large winning-a-prize mouth) 45 has increased extremely in the midst of great success, give priority after a power fail recovery from the winning-a-prize storage to change winning-a-prize equipment (large winning-a-prize mouth) 45 with immediately most winning a prize, and it can pay out and the awarded balls to the winning-a-prize mouth had won a prize most before the power failure come out first. Therefore, it prevents leaning the misgiving whether a game person can perform awarded-balls eccrisis which remained in the impression most, and the awarded balls to the sphere which won a prize of the winning-a-prize mouth which a game person may hold are performed exactly, and can prevent giving a game person suspicion.

[0063] Now, it returns to a flow again, and if it is not a power up at Step S1, eccrisis processing at the time will usually be performed. First, it progresses to step S9 and eccrisis start condition check processing is performed. This supervises whether it is the state which can discharge a game sphere, and sets an eccrisis condition formation flag in the state where it can discharge. Subsequently, eccrisis processing of a sphere on hire is performed at Step S10. Ball rental of this is carried out from the ball rental machine 2, and emission-control equipment 106 lends it based on instruction information etc., and it discharges a sphere. That is, emission control of a sphere on hire based on the ball rental control information exchanged the ball rental machine 2 and in between is performed that the sphere loan based on a prepaid card should be made a game person. In addition, priority is given to the emission control of a sphere on hire over awarded-balls emission control, and it is performed. Subsequently, awarded-balls eccrisis processing (it mentions later by the sub routine for details) at the time (except a power up) is usually performed at Step S11. If it passes through Step S11, it will return to Step S1 and a loop will be repeated.

[0064] With reference to " usually the awarded-balls eccrisis processing at the time", next drawing 7 , the sub routine of the awarded-balls eccrisis processing at the time (Step S11) is usually explained. In this sub routine, it checks whether the number information of awarded balls received from whether there are any awarded-balls data at Step S21 first and the gam control unit 107 is written in the awarded-balls data memory area (game value information-storage field), and if there are no awarded-balls data, a return will be carried out to a main routine. If there are

awarded-balls data, if it distinguishes and the eccrisis start condition formation flag is not set, since eccrisis preparation of a game sphere is not complete, the return of whether there is any eccrisis start condition formation flag (set/reset of this flag are performed by step S9) at Step S22 will be carried out to a main routine as it is. On the other hand, if the eccrisis start condition formation flag is set, it will progress to Step S33, awarded-balls eccrisis processing (Step S it is the same as that of 8) will be performed, and a return will be carried out to a main routine. In addition, by the awarded-balls eccrisis processing at the time, an awarded-balls data memory priority processing (the same processing as Step S6) is not usually performed.
[0065] Moreover, the number information of awarded balls transmitted from the game control unit 107 is performed by the number information reception of awarded balls which is not illustrated. Specifically, if the number information of awarded balls etc. is transmitted from the game control unit 107, interruption will start CPU201 (masker bull interruption), and the number information reception of awarded balls will be performed. In this number information reception of awarded balls, processing which makes the memory storage to which RAM203 corresponds memorize the transmitted number information of awarded balls is performed. That is, as mentioned above, when the number information of awarded balls is five-piece awarded balls, processing which adds 1 to the number five-piece addition memory of awarded balls of the awarded-balls data memory area applicable to this is performed. In the number information reception of awarded balls, processing which memorizes the transmitted number information of awarded balls to the predetermined field of RAM203 as it is is performed, and it is a main processing side and may be made to perform setting processing (for example, addition processing to the number addition memory of awarded balls) to the number data memory of awarded balls based on the number information of storage ****** awarded balls etc. to the aforementioned predetermined field here.
[0066] "Power failure processing" drawing 8 is a flow chart which shows the program of the power failure processing performed by emission-control equipment 106. When the voltage which power failure processing is processed as interruption processing of a non masker bull (a mask is not covered in soft), and is supplied by the power failure detector 208 from the current supply unit 111 descends, For example, when it is detected that the voltage of DC12V descended to predetermined potential and interruption (NMI : non maskable interrupt) is compulsorily applied to CPU201 If CPU halt processing is performed in Step S31 and processing of Step S31 is performed, CPU201 will be stopped and it will prepare for a power failure. This is for collateralizing the content which is made to stop CPU201 at the time of the voltage on which CPU201 can operate normally (before being downed completely), and is memorized by RAM203, as in a power failure CPU201 becomes unstable and an unfixed value is not written in at RAM203.
[0067] thus, with the gestalt of this operation The memory to which th pachinko game machine 1 can respond to all for several awarded-balls minutes that can carry

out awarded balls, and that were decided beforehand is individually prepared for the awarded-balls data memory area (game value information-storage field) of RAM203 by 15 pieces as number addition memory of awarded balls (game value data-storage element). Processing which makes the number addition memory of awarded balls of RAM203 corresponding to the number information of awarded balls concerned carry out the addition storage of the number information of awarded balls transmitted from the game control unit 107 one by one is performed. And it backs up so that the content of storage of the number information of awarded balls in RAM203 may be held. When the number information of awarded balls is held at the number addition memory of awarded balls of RAM203, with reference to the whole number information of awarded balls currently held, the priority of arrears awarded-balls supply is determined from the reference result, and awarded-balls eccrisis is performed to the power up of the game machine 1. Moreover, do not prepare a safe unit but the winning-a-prize sensors 172, 173, 175a-175c are formed in each winning-a-prize mouths 44, 45, 48-50 of the game board 13. In the stage which detected the winning-a-prize sphere by these winning-a-prize sensors 172, 173, 175a-175c The number information of awarded balls is transmitted to emission-control equipment 106 one by one from the game control unit 107, and one winning-a-prize sphere concerning this transmission is discharged out of the game machine 1, without ******(ing) (since there is no safe unit). And with emission-control equipment 106, the addition storage of the number information of awarded balls transmitted one by one from the game control unit 107 is carried out one by one at the number addition memory of awarded balls of RAM203. In this case, the game control unit 107 and emission-control equipment 106 The power supply for using it within these equipments is considered as the composition supplied from the current supply unit 111 (power unit) constituted separately. It has RAM203 (storage means) which carries out the addition storage of the number information of awarded balls transmitted to emission-control equipment 106 from the game control unit 107 one by one at the number addition memory of awarded balls corresponding to the number information of awarded balls concerned (game value data-storage element). The capacitor 212 (backup means : backup power supply means) which can supply a backup power supply is formed in the current supply unit 111 which is the exterior of emission-control equipment 106 to RAM203 to hold the content of storage of RAM203. Moreover, it has reported that the ****** existence drop 59, the ****** numeral machine 118, and the ****** information signal output terminal 119 are formed, and there is arrears awarded-balls eccrisis. Therefore, the following effects can be acquired.

[0068] ** Even if it is the case where could hold, without eliminating the number information of awarded balls entirely even if the power supply of the game machine 1 was intercepted in the state where the number of awarded balls is memorized to RAM203, realizing high-speed awarded-balls discharge processing without preparing a safe unit, for example, it is called a lot of number storage of awarded balls under great success, all awarded balls can be paid out certainly. Therefore, it becomes possible to lose inflicting damage on a game person, to be able to prevent the complaint dissatisfaction, and to prevent the trouble of a game store and a game person therefore. Especially, the fault that discharge of a game sphere with few awarded balls continues, or it takes time that the game sphere of the awarded-balls discharge with few awarded balls will be discharged previously, and an upper pan is covered with a sphere is cancelable at the time of a power fail recovery. Therefore, since a game person can perform a game immediately, even if sales fall off temporarily in the time of a power failure etc., the sales in the game store after power failure restoration can be raised. Moreover, since expenditure of awarded balls is not overdue, either, while if the expenditure pace of awarded balls is late the sphere of a constant rate being able to cancel the state of saying that it is not securable immediately, and giving a game person a dissatisfied feeling are lost unlike the former, in case awarded balls are paid out based on the number information of awarded balls held at the game machine 1 at the time of a power fail recovery, the situation where a game is interrupted is also lost.

[0069] Furthermore, since the state of saying that a sphere is immediately lost to the game person who wants to continue a game immediately, for example at the time of a power fail recovery is canceled, it is not said intermittent that a game will become. Moreover, early discharge of non-paid out awarded balls is desired and the demand of a game person called ** can be met. Although the game person who wants to perform a game does not want to begin a game after grasping the situation of non-paid out awarded balls unless non-paid out awarded balls become more than fixed, since expenditure of awarded balls is performed efficiently immediately, with the form of this operation, time to grasp the situation of non-paid out awarded balls can be shortened. Even if it performs a demand which large number of people's game person mentioned above especially at the time of the restoration from a power failure, it can respond to this. Moreover, since game resumption of the game person in all the game machines 1 is not overdue at the time of a power fail recovery, it is avoidable that the sales of a game store decrease extremely. In addition, after being check and maintenance and turning off the power supply of the game machine 1 temporarily, not only the time of a power fail recovery but when restoring for example, during opening, there is the same effect as the above.

[0070] ** If it is the composition of preparing a backup power supply means to back up the contents of storage of emission-control equipment 106 (namely, the contents of storage of RAM203) in the current supply unit 111 (power unit), the contents of storage can be backed up using usual RAM203, for example, it is not necessary to use special electronic parts like EEPROM. Therefore, it is effective in not writing in like EEPROM and not caring about the number of limits possible [cost reduction].
** Since the current supply unit 111 (power unit) was formed in the exterior of emission-control equipment 106 and the function made to back up RAM203 of emission-control equipment 106 was moreover prepared in the current supply unit

111 (power unit), the circuit of emission-control equipment 106 can be miniaturized. Therefore, it is not necessary to take the large space of the rear-face space of the game machine 1, and unjust suppression is also attained while being able to consider as the good thing of the visibility which felt game machine 1 rear face refreshed.
** Since expenditure of the awarded balls to which priority was given over the power up (at for example, the time of a power fail recovery) with reference to the whole number information of awarded balls is performed, expenditure more than the constant rate which a game person desires to the sphere which is not paid [which is memorized] out can be performed immediately. Therefore, even if a game person performs a game to a power up immediately, it is effective in a game being hard to be interrupted.
[0071] ** When the number of two or more awarded balls remains as un-paying out, by giving priority to and paying out what has the large number of awarded balls, few awarded-balls expenditure is made to deferment, and expenditure more than the constant rate which a game person desires can be performed immediately.
** Since it is the composition which carries out the addition storage of the number information of awarded balls transmitted from the game control unit 107 one by one at the number addition memory of awarded balls corresponding to the number information of awarded balls concerned (game value data-storage element) Since determination of priority is made only by making a comparison judgment of the addition storage value of each number information of awarded balls when the whole addition storage currently held at the number addition memory of awarded balls is compared and it is going to process priority discharge at the time of the awarded-balls expenditure for arrears, it is easy to process, and a program is also easy and it ends.
** Since it is reporting carrying out information of the ****** existence drop 59, the ****** numeral machine 118, and the ****** information signal output terminal 119 being formed, and there being arrears awarded balls, and discharge of arrears awarded balls, a game person or a salesclerk can be made to recognize clearly how arrears awarded balls are processed. Even if there is many discharge rather than the usual discharge from the game machine 1, at a game store side, distinction with unjust discharge can be performed, because a game store side understands performing non-paid out awarded-balls discharge especially. Moreover, in a game person side, it can grasp easily what discharge it is, and an unnecessary trouble can be prevented. That is, since it can judge how many there is any number of awarded balls for un-paying out, trouble generating between a game person and a game store is avoidable.
[0072] Next, the form of other operations of this invention is explained.
The form of "form of the 2nd operation" the 2nd operation differs from the form of the 1st operation of the contents of the processing program in emission-control equipment 106. In addition, in the form of the 2nd operation, although a part of functions of emission-control equipment 106 differ compared with the form of

implementation of the above 1st, it explains with the same sign on account of explanation. Drawing 10 is a flow chart which shows the program of the emission-control processing in the form of the 2nd operation, and only the contents of Step S41 differ from the form of the 1st operation in this program (others attach the same number). At Step S41, it distinguishes whether there is any input of the discharge manipulate signal HS. The discharge manipulate signal HS is inputted into emission-control equipment 106 when a game person operates the discharge operating knob 34, and it is detected that the game person resumed the game. At Step S41, at the time of NO, it stands by to this step, and if set to YES, it will escape to Step S7. Therefore, when the number information of awarded balls that it does not pay out is held at the power up (at for example, the time of a power fail recovery) at the awarded-balls data memory of RAM203 and a game person resumes a game, the awarded-balls expenditure for arrears can carry out automatically, and there is an advantage of not troubling a salesclerk's hand. The form of this 2nd operation is the case where operate the sphere discharge switch 60 and ****** expenditure is not performed, and serves as the composition that the discharge manipulate signal HS is inputted into the interface 205 for an input, instead of the sphere discharge switch 60 by drawing 4 . In addition, although it had distinguished whether there would be any input of the discharge manipulate signal HS at Step S41, what uses the awarded-balls data signal beforehand constituted as for example, a game execution signal as another modification is considered. In this case, it considers as processing which there is an input of the awarded-balls data signal transmitted to emission-control equipment 106 from the game control unit 107 at Step S41 at the time of winning a prize to a winning-a-prize mouth, or (that is, is there any awarded-balls entry of data?) distinguishes whether it is no. When it is made such, the sphere discharge switch 60 and the discharge manipulate signal HS serve as the composition of not being inputted into the input interface 205, by drawing 4 . When it is made the composition which judges an awarded-balls entry of data, the awarded-balls expenditure for arrears can carry out automatically, and there is an advantage of not troubling a salesclerk's hand.

[0073] The form of "form of the 3rd operation" the 3rd operation is an example of application in the case of performing three awarded balls, as shown in drawing 11 . In addition, in the form of the 3rd operation, although a part of functions of emission-control equipment 106, the game control unit 107, and RAM203 differ compared with the form of implementation of the above 1st, it explains with the same sign on account of explanation. The game control unit 107 transmits the number information of setting awarded balls (information of 5 of three lines, seven pieces, and 13 pieces for example in the winning-a-prize mouth of the game board 13) beforehand set as the game control unit 107 concerned to a power up (a power supply will be supplied also to the game control unit 107 and emission-control equipment 106 if a power supply is supplied to the game machine 1), and emission-control equipment 106. Emission-control equipment 106 will be memorized in the setting awarded-balls data-definition memory which formed in RAM203 the number information of setting awarded balls on the game control unit 107 connected to the emission-control equipment 106 concerned, if the number information of setting awarded balls is received. As shown in RAM203 at drawing 11 (a), if the setting awarded-balls data-definition memory area (game value information-storage field) is prepared, for example, the number information of awarded balls of five pieces, seven pieces, and 13 pieces is received, it will memorize to setting awarded-balls data-definition memory to a field which is called five number definitions of awarded balls, seven number definitions of awarded balls, and 13 number definitions of awarded balls and which was formed beforehand. Moreover, the number addition memory of awarded balls is simultaneously assigned to the awarded-balls data memory beforehand secured corresponding to this setting awarded-balls data-definition memory by the set.

[0074] For example, corresponding to five number definitions of awarded balls of setting awarded-balls data-definition memory, seven number definitions of awarded balls, and 13 number definitions of awarded balls, a field called the number five-piece addition memory of awarded balls, the number seven-piece addition memory of awarded balls, and the number 13-piece addition memory of awarded balls is formed in awarded-balls data memory by the set, and it has composition to assign. And the addition storage of the number information of awarded balls transmitted from the game control unit 107 is carried out at the corresponding awarded-balls data memory which was assigned. For example, if the transmitted number information of awarded balls is five-piece awarded-balls information, 1 will be added and memorized in the number five-piece addition memory of awarded balls currently assigned corresponding to five number definitions of awarded balls of setting awarded-balls data-definition memory. If the following five-piece awarded-balls information comes, further 1 will be added to the number five-piece addition memory of awarded balls (before five-piece discharge of awarded balls), and 2 will be memorized. It is the same, when the transmitted number information of awarded balls is seven-piece awarded-balls information and the number information of awarded balls is 13-piece awarded-balls information.

[0075] Thus, since RAM203 is backed up by the awarded-balls data memory of setting awarded-balls data-definition memory and a set even if there is a power failure after carrying out the addition storage of the three number information of awarded balls, After a power fail recovery, for example, the maintenance data of a power up as shown in drawing 11 (b), Namely, awarded-balls number 7 piece addition memory =10, the number 13-piece addition memory of awarded balls of 13 number definitions of awarded balls of awarded-balls number 5 piece addition memory =7 and seven number definitions of awarded balls of five number definitions of awarded balls = supposing the data 5 were held With emission-control equipment 106, with reference to the whole maintenance data of the number addition memory of awarded balls by considering as the priority which gave priority to the number information of awarded balls that the number of awarded balls is large Drive control of the eccrisis unit 105 is carried out, and awarded-balls eccrisis is carried out to the priority which wrote in priority memory with ranking =3 of ranking [of ranking =1 of 15 piece awarded balls, and seven piece awarded balls] = 2 or 5-piece awarded balls as shown in drawing 11 (c), and was written in this priority memory. By doing in this way, compared with the gestalt of the 1st operation, memory space relevant to the number information of awarded balls in RAM203 can be lessened further, and RAM203 can be utilized efficiently. That is, three lines (the number of awarded balls of five pieces, seven pieces, and 13 pieces) are most in practice, and the number of awarded balls of the game board 13 in the pachinko game machine 1 can save 9 field (byte) part memory space compared with the gestalt of the 1st operation.

[0076] "The modification of the gestalt of the 3rd operation", next drawing 11 (d) are the modifications of the gestalt of the 3rd operation, and are composition which gives priority to and pays out what has the large number of winning-a-prize spheres for every winning-a-prize sphere with reference to the whole maintenance data of the number addition memory of awarded balls of a power up. specifically, it is shown in drawing 11 (b) -- as -- the maintenance data of the number addition memory of awarded balls -- the number of awarded balls -- 5 piece addition memory =7 and the number of awarded balls -- 7 piece addition memory =10 and the number of awarded balls -- that it is in the state of 13 piece addition memory =5 Since the number of winning-a-prize spheres is the largest, the direction of the number seven-piece addition memory of awarded balls chooses this, and gives priority to seven-piece awarded balls. subsequently Choose the number five-piece addition memory of awarded balls with the large number of winning-a-prize spheres, and, finally the smallest number 15-piece addition memory of awarded balls of the number of winning-a-prize spheres is chosen. As shown in drawing 11 (d), it writes in ranking memory with ranking =3 of ranking [of ranking =1 of seven piece awarded balls and five piece awarded balls] = 2 or 13-piece awarded balls, and awarded balls are paid out according to this ranking. In addition to the above-mentioned advantage which carried out setting awarded-balls data-definition memory and awarded-balls data memory to it being such composition at the set, the same effect as the case of drawing 5 (d) mentioned above can be acquired.

[0077] The gestalt of "gestalt of the 4th operation" the 4th operation totals all unpaid awarded balls to a power up, and makes them the composition which pays out the total value at a stretch. In addition, in the gestalt of the 4th operation, although a part of functions of emission-control equipment 106, the game control unit 107, and RAM203 differ compared with the gestalt of implementation of the above 1st, it explains with the same sign on account of explanation. Although the composition of the awarded-balls data memory of RAM203 in emission-control equipment 106 is the same as that of the gestalt of the 1st operation and maintenance of a power up is similarly performed to the number seven-piece addition memory of awarded balls, and the number 15-piece addition memory of awarded balls, subsequent awarded-balls data memory priority processings differ. As the maintenance data of a power up show now drawing 12 (b), when the maintenance data of the number seven-piece addition memory of awarded balls are [the maintenance data of 3 and the number 15 piece addition memory of awarded balls] 4, CPU201 calculates number of awarded balls x maintenance data, computes the total value of the awarded balls of all arrears further, and performs processing which pays out the total value at a stretch. In the example of drawing 12 (c), since the total value in the case of seven awarded-balls numbers becomes 7x3=21 piece, the total value in the case of 15 awarded-balls numbers becomes 15x4=60 piece and it becomes the total value =81 piece of the awarded balls of all arrears, 81 awarded-balls eccrisis will be performed at a stretch.

[0078] Drawing 13 is a flow chart which shows the program of the emission-control processing in the gestalt of the 4th operation, and only the content of Step S51 differs from the gestalt of the 1st operation in this program (others attach the same number). At Step S51, awarded-balls data memory batch processing is performed. In awarded-balls data memory batch processing, as all unpaid awarded balls are totaled and directions which pay out the total value collectively are given to the eccrisis unit 105, it progresses to Step S8, and awarded-balls eccrisis processing is performed. For example, in the case of the example of being shown in drawing 12 (c), it becomes the total value =81 piece of the awarded balls of all arrears, and 81 awarded-balls eccrisis is performed at a stretch. In this case, the ****** numeral machine 118 formed on the case of the emission-control processing 106 by the side of game machine 1 rear face serves as composition (composition which displays 2 figures [Light Emitting Diodes / of seven segment types / two]) which displays the present storage total number of awarded balls, as shown in drawing 14 , and it is displayed as awarded-balls total value =30 piece of all arrears in this example. Thus, by indicating how many there is any total number of awarded balls memorized for un-discharging present, a part for the awarded balls of the arrears discharged at a stretch can be recognized easily.

[0079] Here, in order to pay out unpaid awarded-balls total value at a stretch, whether the conditions of supply of whether to be ready for the ability discharging a game sphere as the premise and a game sphere (game value) are satisfied needs to be checked, and this can be checked by formation of an eccrisis start condition (when a sphere is in the odd sensor 224 and a sphere is in the 1st eccrisis sensor 222 for not overflow but awarded-balls eccrisis in the lower pan 32). Therefore, when it will be simply made such although you may make it pay out unpaid awarded-balls total value at a stretch if ready for the ability discharging a game sphere, it is ************** to spheres running short immediately at the path for awarded balls by the side of game machine 1 rear face (reserve sphere passage), an eccrisis start condition grasping, and it being alike. Then, the odd sensor 224 arranged at the path for awarded balls by the side of game machine 1 rear face (reserve sphere passage) is formed in the position (for example, position which can be discharged 100 or more

pieces) of the number of predetermined spheres as a limit of expenditure, and it enables it to guarantee as the maximum of 1 time of the amount of supply out of which the game machine 1 can pay this number of spheres collectively.
[0080] Thus, with the gestalt of the 4th operation, since the total of non-paid out awarded balls pays out collectively after a power fail recovery, the number of spheres more than fixed which a game person desires immediately may be discharged by the upper pan 31, and it is effective in being easy to resume a game immediately. Moreover, since they are collectively discharged by non-paid out awarded balls, it also becomes early that resumption of use of all the game machines 1 is carried out, and the suppression of it is attained in sales reduction of a game store at the minimum. Since it is considering as the maximum of 1 time of the amount of supply in the case of paying out collectively the number of spheres guaranteed by the odd sensor 224, while 1 time of the amount of supply can serve as the number of spheres guaranteed with the game machine 1 and can pay out a sphere correctly, it is in the middle of eccrisis, and there is no bird clapper in the shortage of a sphere. Therefore, while being able to prevent failure of the game machine 1 etc., receiving call that a sphere does not come out [a salesclerk] from a game person decreases.
[0081] Various kinds of deformation implementation which is stated not only to the gestalt of the above operations but to the following is possible for the gestalt of operation of this invention.
(a) It cannot be overemphasized by this invention not only the pachinko game machine of an example like the gestalt of operation but that you may be other game machines. For example, it is applicable to a pachinko machine model type [other], an arrangement ball machine, a mahjong ball game machine, a slot machine, etc. Moreover, this invention is applicable also to a thing like for example, not a pachinko game machine but an image formula game machine.
[0082]
[Effect of the Invention] According to invention according to claim 1, the following effects can be acquired. Even if it is the case where could hold, without eliminating the number information of awarded balls entirely even if the power supply of a game machine was intercepted in the state where the number of awarded balls is memorized for the storage means (for example, RAM203), realizing high-speed awarded-balls eccrisis processing without preparing a safe unit, for example, it is specially called a lot of number storage of awarded balls in a game state (for example, great success), all awarded balls can be paid out certainly. Therefore, it becomes possible to lose inflicting damage on a game person, to be able to prevent the complaint dissatisfaction, and to prevent the trouble of a game store and a game person therefore. Especially, the fault that eccrisis of a game sphere with few awarded balls continues, or it takes time that the game sphere of the awarded-balls eccrisis with few awarded balls will be discharged previously, and an upper pan is covered with a sphere is cancelable at the time of a power fail recovery. Therefore,

since a game person can perform a game immediately, even if sales fall off temporarily in the time of a power failure etc., the sales in the game store after power failure restoration can be raised. Moreover, since expenditure of awarded balls is not overdue, either, while if the expenditure pace of awarded balls is late the sphere of a constant rate being able to cancel the state of saying that it is not securable immediately, and giving a game person a dissatisfied feeling are lost unlike the former, in case awarded balls are paid out based on the number information of awarded balls held at the game machine at the time of a power fail recovery, the situation where a game is interrupted is also lost.

[0083] Furthermore, since the state of saying that a sphere is immediately lost to the game person who wants to continue a game immediately, for example at the time of a power fail recovery is canceled, it is not said intermittent that a game will become. Moreover, the demand of the game person of desiring early discharge of non-paid out awarded balls can be met. Although the game person who wants to perform a game does not want to begin a game after grasping the situation of non-paid out awarded balls unless non-paid out awarded balls become more than fixed, since expenditure of awarded balls is performed efficiently immediately, by this invention, time to grasp the situation of non-paid out awarded balls can be shortened. Even if it performs a demand which large number of people's game person mentioned above especially at the time of the restoration from a power failure, it can respond to this. Moreover, since game resumption of the game person in all game machines is not overdue at the time of a power fail recovery, it is avoidable that the sales of a game store decrease extremely. In addition, after being check and maintenance and turning off the power supply of a game machine temporarily, not only the time of a power fail recovery but when restoring for example, during opening, there is the same effect as the above. Since expenditure of the awarded balls to which priority was given over the power up (at for example, the time of a power fail recovery) with reference to the whole number information of awarded balls is performed, expenditure more than the constant rate which a game person desires to the sphere which is not paid [which is memorized] out can be performed immediately. Therefore, even if a game person performs a game to a power up immediately, it is effective in a game being hard to be interrupted.

[0084] According to invention according to claim 2, since the total of non-paid out awarded balls pays out collectively after a power fail recovery, the fixed number of spheres which a game person desires immediately may be discharged by the upper pan, and it is effective in being easy to resume a game immediately. Moreover, since they are collectively discharged by non-paid out awarded balls, it also becomes early that resumption of use of all the game machines is carried out, and the suppression of it is attained in sales reduction of a game store at the minimum.

[0085] According to invention according to claim 3, the contents of storage can be backed up using the usual RAM, for example, it is not necessary to use special electronic parts like EEPROM by preparing the backup power supply means which can supply a backup power supply in the exterior of emission-control equipment to a storage means (for example, RAM203). Therefore, it is effective in not writing in like EEPROM and not caring about the number of limits possible [cost reduction].

[0086] Since according to invention according to claim 4 the power unit (for example, current supply unit 111) was prepared in the exterior of emission-control equipment and the function made to back up the storage means of emission-control equipment was moreover prepared in the power unit, the circuit of emission-control equipment can be miniaturized. Therefore, it is not necessary to take the large space of the rear-face space of a game machine, and unjust suppression is also attained while being able to consider as the good thing of the visibility which felt game machine 1 rear face refreshed.

[0087] According to invention according to claim 5, when the number of two or more awarded balls remains as awarded balls of non-********, by giving priority to and paying out what has the large number of awarded balls, few awarded-balls expenditure is made to deferment, and expenditure more than the constant rate which a game person desires can be performed immediately.

[0088] According to invention according to claim 6, priority is given to the number information of awarded balls that the number of winning-a-prize spheres for every number of awarded balls is large, and there are the following effects by carrying out awarded-balls discharge.

** It is lost that only the awarded balls (for example, 15-piece awarded balls) which are not paid [which] out project, and are memorized, and the storage capacity of each game value data-storage element (for example, the number addition memory of awarded balls) in the number information-storage field of awarded balls (for example, awarded-balls data memory area) equalizes immediately.

** Since discharge processing of the number of awarded balls with many winning-a-prize spheres is carried out previously, it can prevent that the maintenance data of the game value data-storage element (for example, the number addition memory of awarded balls) memorized to the number information-storage field of awarded balls become memory over.

** A game person knows clearly many which awarded balls were memorized to the number information-storage field of awarded balls with the ball by which continuation eccrisis is carried out. for example, the awarded balls are known by how many eccrisis sound of a sphere continue, for example, they are seven-piece awarded balls -- or it is distinguishable whether they are 15-piece awarded balls

** For example, even if it was that the electric current is cut off and the winning-a-prize storage (for example, storage of the number 15-piece addition memory of awarded balls) to a large winning-a-prize mouth (for example, change winning-a-prize equipment 45) has increased extremely in the midst of great success, after a power fail recovery, priority can be given, it can pay out of the winning-a-prize storage to a large winning-a-prize mouth with immediately most winning a prize, and the awarded balls to the winning-a-prize mouth which had won a prize most before the power failure come out first. Therefore, it prevents leaning the misgiving whether a game person can perform awarded-balls eccrisis which remained in the impression most, and the awarded balls to the sphere which won a prize of the winning-a-prize mouth which a game person may hold are performed exactly, and can prevent giving a game person suspicion.

[0089] By considering the number information of awarded balls transmitted from the game control unit as the composition which carries out addition storage one by one at the game value data-storage element (for example, the number addition memory of awarded balls) corresponding to the number information of awarded balls concerned according to invention according to claim 7 When the whole addition storage currently held at the game value data-storage element is compared and it is going to process priority discharge at the time of the awarded-balls expenditure for arrears Determination of priority is made only by making a comparison judgment of the addition storage value of each number information of awarded balls, and it is easy to carry out awarded-balls discharge processing for arrears, and a program is also easy and ends.

[0090] While according to invention according to claim 8 1 time of the amount of supply can serve as the number of spheres guaranteed with the game machine and being able to pay out a sphere correctly by considering as the maximum of 1 time of the amount of supply of the game value which pays out collectively the number of game spheres guaranteed by the reserve sphere sensor (for example, odd sensor 224), it is in the middle of discharge, and there is no bird clapper in the shortage of a sphere. Therefore, while being able to prevent failure of a game machine etc., receiving call that a sphere does not come out [a salesclerk] from a game person decreases.

[0091] According to invention according to claim 9, a game person or a salesclerk can be made to recognize clearly how arrears awarded balls are processed by reporting carrying out the information and arrears awarded-balls awarded balls of an information means (for example, the ****** existence drop 59, the ****** numeral machine 118, the ****** information signal output terminal 119) being established, and there being arrears awarded balls. Even if there is many discharge rather than the usual discharge from a game machine, at a game store side, distinction with unjust discharge can be performed, because a game store side understands performing non-paid out awarded-balls discharge especially. Moreover, in a game person side, it can grasp easily what discharge it is, and an unnecessary trouble can be prevented. That is, since it can judge how many there is any number of awarded balls for un-paying out, trouble generating between a game person and a game store is avoidable.

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the front view of the game machine which is the gestalt of 1 operation of this invention.

[Drawing 2] It is the rear-face view of a game machine.

[Drawing 3] It is drawing showing the current supply system of a game machine.

[Drawing 4] It is drawing showing the control system of a game machine.

[Drawing 5] It is drawing explaining the awarded-balls data memory of RAM.

[Drawing 6] It is the flow chart which shows the program of emission-control equipment.

[Drawing 7] It is the flow chart which shows the sub routine of awarded-balls eccrisis processing.

[Drawing 8] It is the flow chart which shows the program of power failure processing.

[Drawing 9] It is drawing explaining a ****** numeral machine.

[Drawing 10] It is the flow chart which shows the program of emission-control equipment.

[Drawing 11] It is drawing explaining other examples of the awarded-balls data memory of RAM.

[Drawing 12] It is drawing explaining other examples of the awarded-balls data memory of RAM.

[Drawing 13] It is the flow chart which shows the program of emission-control equipment.

[Drawing 14] It is drawing explaining other examples of a ****** numeral machine.

[Description of Notations]

1 Game Machine
59 ****** Existence Drop (Information Means)
106 Emission-Control Equipment
107 Game Control Unit
111 Current Supply Unit (Power Unit)
118 ****** Numeral Machine (Information Means)
119 ****** Information Signal Output Terminal (Information Means)

201 CPU (Information-Memory-Processing Means, Priority Determination Means, Game Value Supply Processing Means)
203 RAM (Storage Means)
212 Capacitor (Backup Means, Backup Power Supply Means)
224 Odd Sensor (Reserve Sphere Sensor)

[Translation done.]

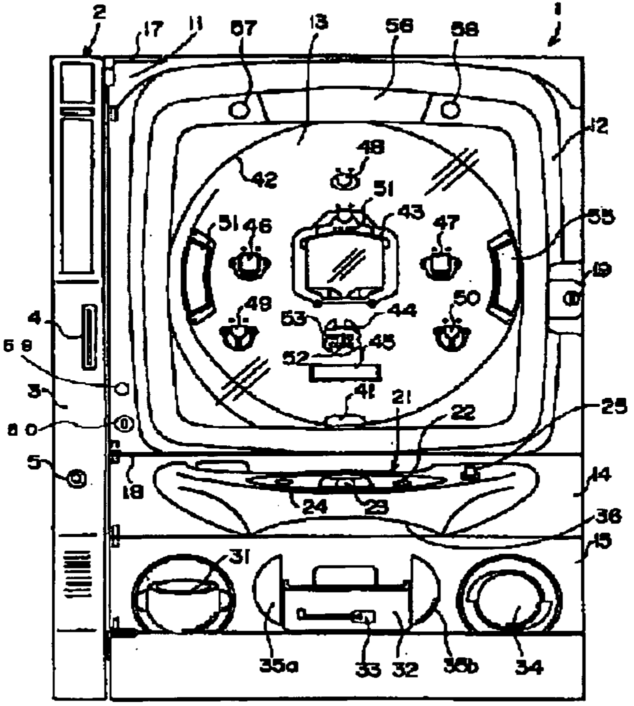
* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

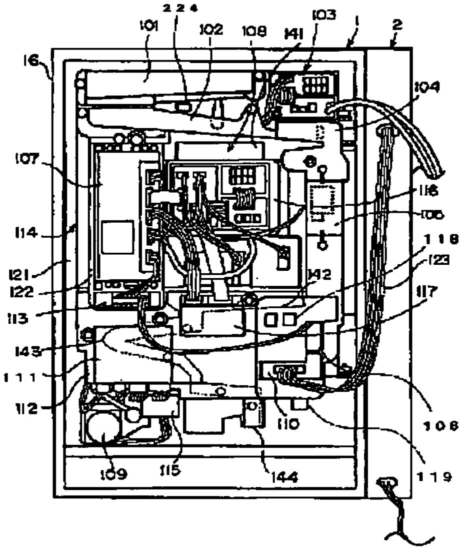
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

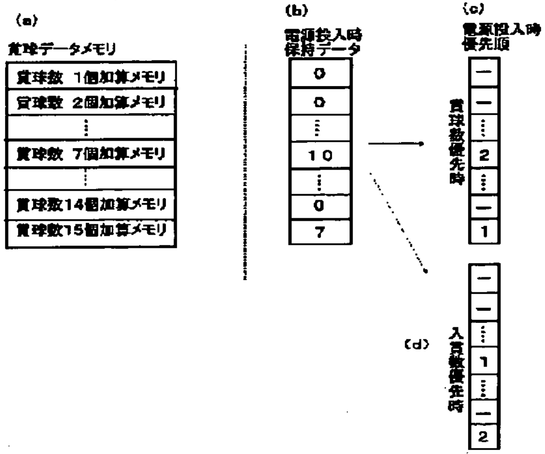
[Drawing 1]


2
17
11
57
13
56
58
1
12
42
48
51
43
51
46
47
55
19
4
49
53
44
50
59
45
52
3
41
21
60
22
25
5
18
24
23
14
36
15
31
35a
33
32
35b
34

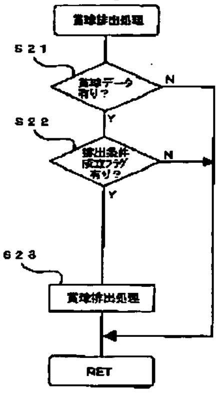
[Drawing 2]


224
101
102
108
141
103
1
2
16
104
107
116
105
114
118
123
121
122
142
117
113
143
111
112
110
106
109
115
144
119

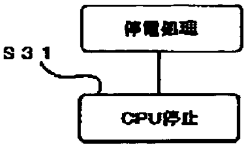
[Drawing 5]


(a)
賞球データメモリ
賞球数 1個加算メモリ
賞球数 2個加算メモリ
賞球数 7個加算メモリ
賞球数14個加算メモリ
賞球数15個加算メモリ
(b)
電源投入時保持データ
0
0
10
0
7
(c)
電源投入時優先順
賞球数優先時
2
1
(d)
入賞数優先時
1
2

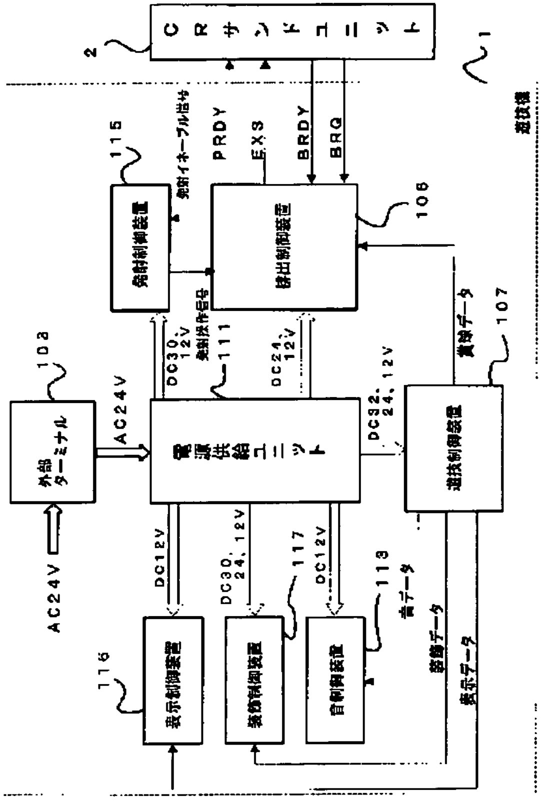
[Drawing 7]


賞球排出処理
S21
賞球データ有り？
N
Y
S22
排出条件成立フラグ有り？
N
Y
S23
賞球排出処理
RET

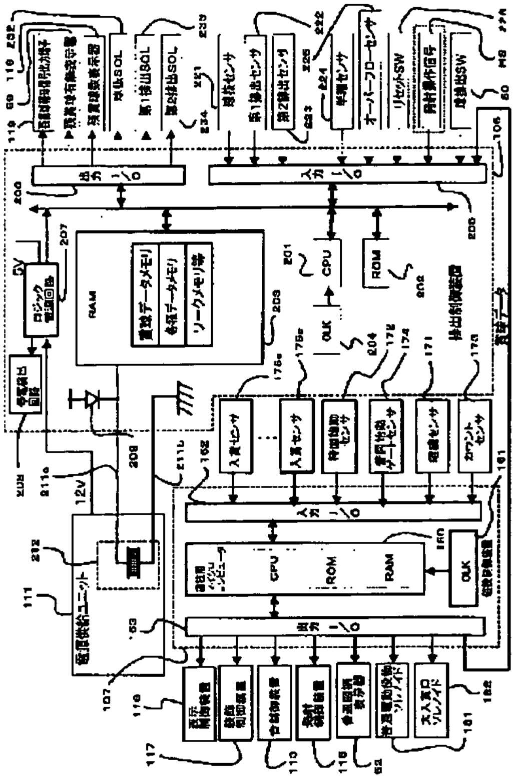
[Drawing 8]


停電処理
S31
CPU停止

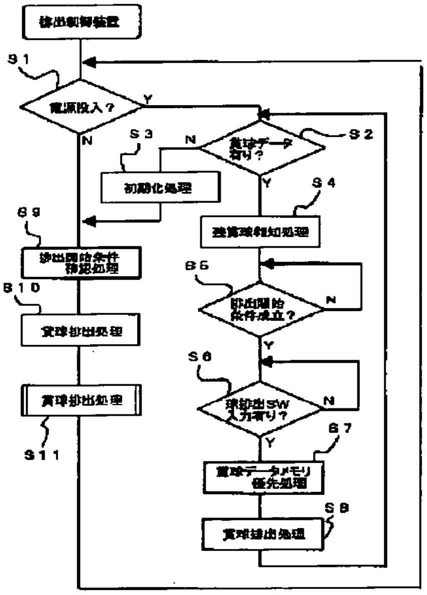
[Drawing 3]


2
CRサンドユニット
1
遊技機
115
発射制御装置
発射イネーブル信号
PRDY
EXS
BRDY
BRQ
106
払出制御装置
賞球データ
107
遊技制御装置
103
外部ターミナル
AC24V
AC24V
電源供給ユニット
111
DC30,12V
発射操作信号
DC24,12V
DC32,24,12V
DC12V
DC30,24,12V
117
DC12V
113
音データ
装飾データ
表示データ
116
表示制御装置
装飾制御装置
音制御装置

[Drawing 4]

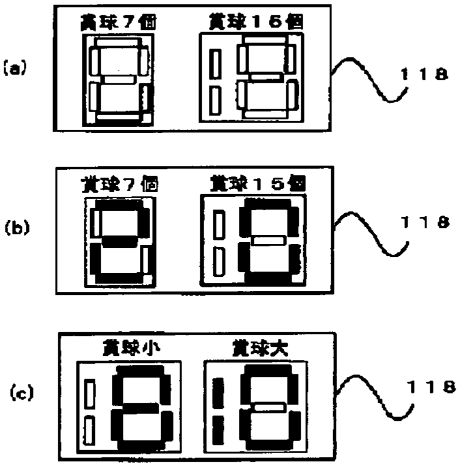


[Drawing 6]

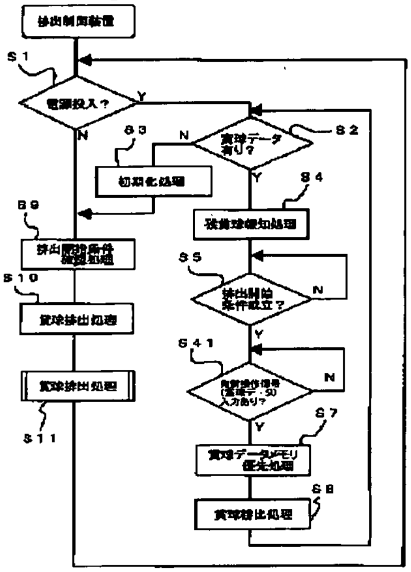

排出制御装置
S1
電源投入？
Y
N
S2
賞球データ有り？
N
S3
初期化処理
Y
S4
残賞球報知処理
S5
排出開始条件成立？
N
Y
S6
球排出SW入力有り？
N
Y
S7
賞球データメモリ優先処理
S8
賞球排出処理
S9
排出開始条件確認処理
S10
賞球排出処理
賞球排出処理
S11

[Drawing 9]

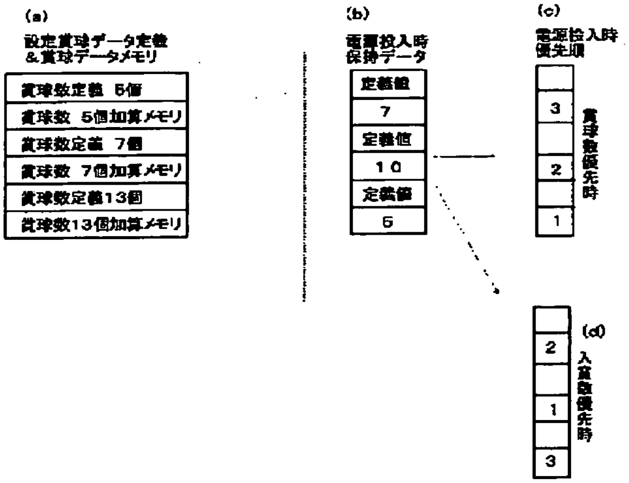
記憶賞球数別に表示


(a)
賞球７個
賞球１５個
１１８
(b)
賞球７個
賞球１５個
１１８
(c)
賞球小
賞球大
１１８

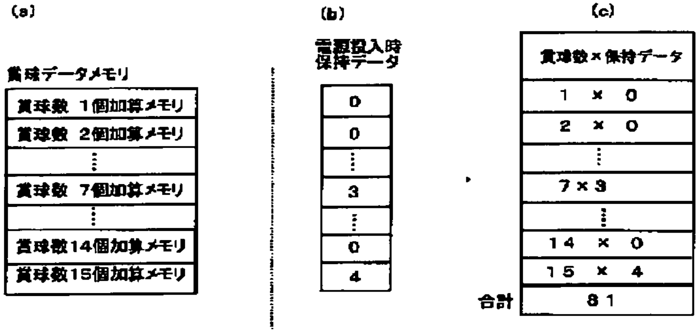
[Drawing 10]


排出制御装置
Ｓ１
電源投入？
Y
N
賞球データ有り？
Ｓ２
N
Ｓ３
初期化処理
Y
Ｓ４
残賞球報知処理
Ｓ９
排出開始条件確認処理
Ｓ１０
賞球排出処理
Ｓ５
排出開始条件成立？
N
Y
Ｓ４１
入力あり？
N
Y
賞球排出処理
Ｓ１１
Ｓ７
賞球データメモリ優先処理
Ｓ８
賞球排出処理

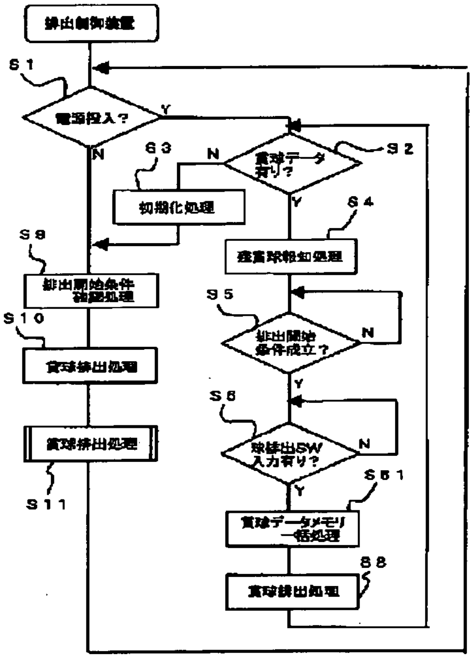
[Drawing 11]


(a)
設定賞球データ定数
&賞球データメモリ
賞球数定義 5個
賞球数 5個加算メモリ
賞球数定義 7個
賞球数 7個加算メモリ
賞球数定義13個
賞球数13個加算メモリ
(b)
電源投入時
保持データ
定義値
7
定義値
10
定義値
5
(c)
電源投入時
優先順
3
2
1
賞球数優先時
(d)
2
1
3
入賞数優先時

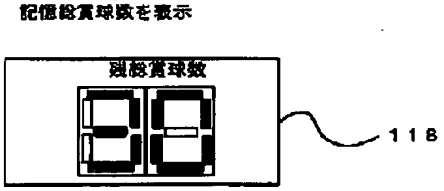
[Drawing 12]


(a)
賞球データメモリ
賞球数 1個加算メモリ
賞球数 2個加算メモリ
⋮
賞球数 7個加算メモリ
⋮
賞球数14個加算メモリ
賞球数15個加算メモリ
(b)
電源投入時
保持データ
0
0
⋮
3
⋮
0
4
(c)
賞球数×保持データ
1 × 0
2 × 0
⋮
7×3
⋮
14 × 0
15 × 4
合計
81

[Drawing 13]


排出制御装置
S1
電源投入？
Y
N
S2
賞球データ有り？
N
S3
初期化処理
Y
S4
残賞球報知処理
S5
排出開始条件成立？
N
Y
S6
球排出SW入力有り？
N
Y
S61
賞球データメモリ一括処理
S8
賞球排出処理
S9
排出開始条件確認処理
S10
賞球排出処理
賞球排出処理
S11

[Drawing 14]


記憶総賞球数を表示
残総賞球数
30
118

[Translation done.]